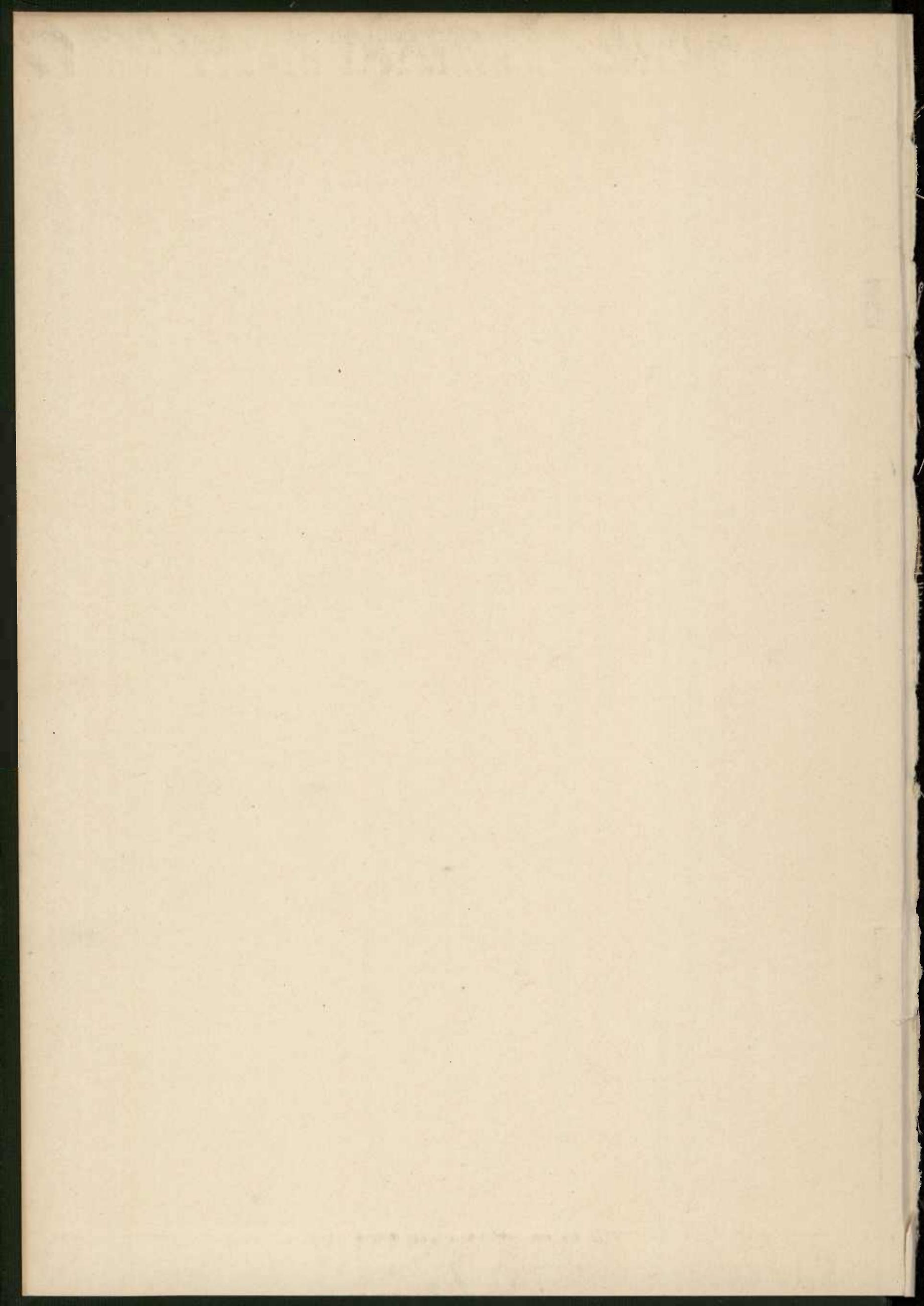


MARYLAND  
GEOLOGICAL  
SURVEY

MARYLAND  
GEOLOGICAL SURVEY



DEVONIAN  
PLATES

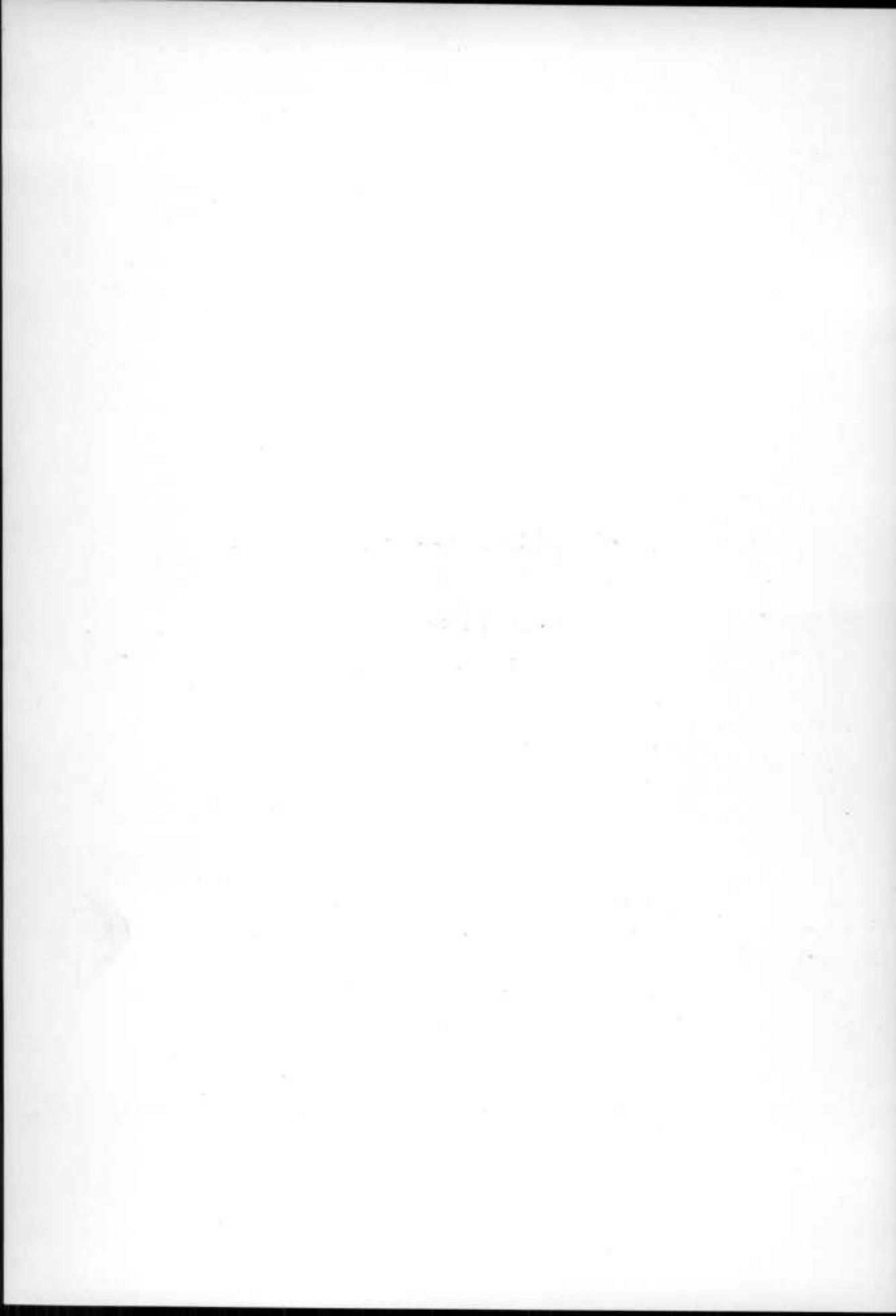


MSA SC 6046-1-35

MARYLAND GEOLOGICAL SURVEY

DEVONIAN

PLATES

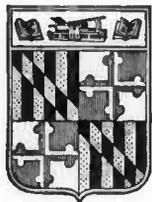


MARYLAND  
GEOLOGICAL SURVEY



DEVONIAN  
PLATES

BALTIMORE  
THE JOHNS HOPKINS PRESS  
1913



*The Lord Baltimore Press*  
BALTIMORE, MD., U. S. A.

DEVONIAN

LOWER



## NOTE

Plates I to XVI, illustrating the Geological and Paleontological Relations of the Lower Devonian, are bound with the text volume. The following plates illustrate the Systematic Paleontology of the Lower Devonian of Maryland.

All drawings cited from New York formations, in the following descriptions of plates, are from the Paleontology of New York, and are after Hall or Hall and Clarke. Only in cases where Hall figured material from Maryland is acknowledgment made in the descriptions.

PLATE XVII

	PAGE
Figs. 1-4. <i>HINDIA SPHÆROIDALIS</i> Duncan.....	195
1. Exterior view.	
2. Radial section of sponge.	
3. Tangential section showing tubes. × 4.	
4. Radial section showing spicules and tubes. × 4.	
Helderberg formation, Keyser member, Cash Valley.	
Figs. 5-9. <i>STREPTELASMA STRICTUM</i> Hall.....	198
5, 6. Lateral and posterior views of corallum.	
7. Transverse section.	
New Scotland formation, New York.	
8. Interior of calyx.	
9. Transverse section of corallum.	
Helderberg formation, New Scotland member, Cherry Run, W. Va.	



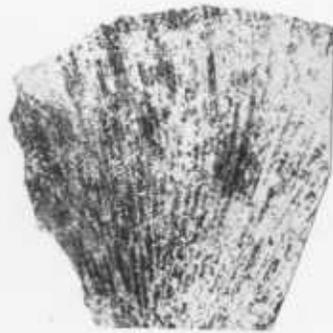
1



2



3



4



5



7



6



8



9

CŒLENERATA—ANTHOZOA

PLATE XVIII

	PAGE
Figs. 1, 2. <i>STREPTELASMA CUMBERLANDICA</i> Swartz n. sp.....	199
1. Exterior of weathered corallum.	
2. Longitudinal section of same individual. Helderberg formation, near Cumberland.	
Figs. 3-7. <i>ZAPHRENTIS ROEMERI</i> M. Edwards and Haime.....	200
3. Side view of corallum, questionably referred to this species. Oriskany formation, Ridgely member, Cumberland.	
4. Side view of corallum.	
5, 6. Transverse sections of corallum.	
7. Longitudinal section of corallum. New Scotland formation, New York.	



CELENERATA—ANTHOZOA

PLATE XIX

	PAGE
Figs. 1-4. <i>ZAPHRENTIS KEYSERENSIS</i> Swartz n. sp. ....	201
1. Side view of type.	
2, 3. Transverse sections.	
4. Longitudinal section of a small individual.	
Helderberg formation, Keyser member, W. Va.	
Figs. 5-9. <i>CYATHOPHYLLUM CLARKI</i> Swartz n. sp. ....	201
5. Side view of type.	
6. Interior of calyx of same. Martin Mountain, Allegany County.	
7. Transverse section. $\times 2$ . Cumberland.	
8. Longitudinal section. Martin Mountain, Allegany County.	
9. Side view of corallum showing deep annular constrictions. Same locality.	
Helderberg formation, Keyser member.	
Figs. 10, 11. <i>CYATHOPHYLLUM OHERNI</i> Swartz n. sp. ....	203
10. Side view of two individuals. The corallum on right side is incomplete.	
11. Interior of calyx of one of preceding.	
Helderberg formation, Martin Mountain, Allegany County.	
Figs. 12-17. <i>CYATHOPHYLLUM RADICULUM</i> Rominger ? .....	202
12-14. Side views of three coralla.	
15-17. Calices of same individuals.	
Helderberg formation, Keyser member, Cumberland.	



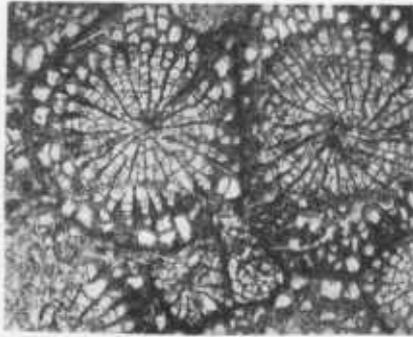
CŒLENTERATA—ANTHOZOA

PLATE XX

	PAGE
Figs. 1-4. <i>CYATHOPHYLLUM INEQUALE</i> (Hall).....	205
1. Transverse section of coralla.	
2, 3. Portions of same. $\times 2$ and $\times 5$ .	
4. Longitudinal section. $\times 2$ .	
Helderberg formation, Keyser member, Flintstone.	
Figs. 5-9. <i>CYATHOPHYLLUM SCHUCHERTI</i> Swartz n. sp.....	203
5. Cluster of branching coralla. Devil's Backbone.	
6. Single stem. Cash Valley, Lower Stromatopora bed.	
7. Calyx. Same locality.	
8, 9. Transverse and longitudinal sections. Devil's Backbone.	
Helderberg formation, Keyser member.	



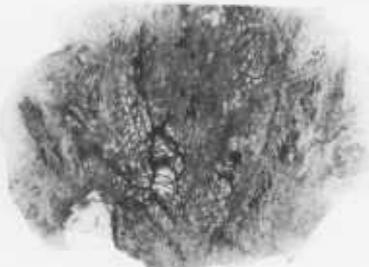
1



3



2



4



8



9



5



6



7

CCELENTERATA—ANTHOZOA

PLATE XXI

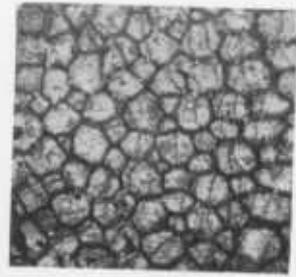
	PAGE
Figs. 1, 2. <i>CYATHOPHYLLUM MARYLANDICUM</i> Swartz n. sp.....	204
1. Portion of a branch. Hyndman, Pennsylvania.	
2. View of calyx. Cash Valley, Lower Stromatopora bed. Helderberg formation, Keyser member.	
Figs. 3-6. <i>HELIOPHYLLUM</i> cf. <i>CORNICULUM</i> Lesueur.....	206
3, 4. Side view and calyx. Martin Mountain, Allegany County.	
5, 6. Small individual, questionably referred to this species. Cumber- land. Helderberg formation.	
Figs. 7-9. <i>CYSTIPHYLLUM FASCICULATUM</i> Swartz n. sp.....	207
7. Side view of several corallites.	
8. Transverse section of same.	
9. Transverse section of a single corallite. Helderberg formation, Cumberland.	
Figs. 10, 11. <i>COLUMNARIA</i> ? <i>HELDERBERGIAE</i> Swartz n. sp.....	207
10. Longitudinal section of type.	
11. Longitudinal section of same. $\times 5$ . Helderberg formation, Keyser member, Warrior Mountain, Allegany County.	



CCELENERATA—ANTHOZOA

PLATE XXII

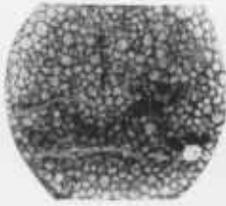
	PAGE
Fig. 1. FAVOSITES HELDERBERGÆ Hall.....	208
Corallum showing hemispherical form. New Scotland formation, New York.	
Figs. 2-7. FAVOSITES HELDERBERGÆ VAR. PRÆCEDENS Schuchert.....	209
2. Corallum of lobate form. Keyser, W. Va.	
3. Corallum of clavate form. Near Seymour, W. Va.	
4. Corallum of dendroid form. Keyser, W. Va.	
5, 6. Tangential and radial sections. $\times 2\frac{1}{2}$ . Lower Stromatopora bed, Devil's Backbone.	
7. Corallum possessing very small cells. Cash Valley. Helderberg formation, Keyser member.	



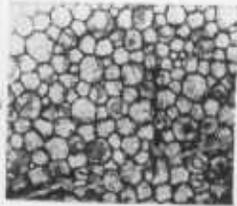
CELENERATA—ANTHOZOA

PLATE XXIII

	PAGE
Figs. 1-4. FAVOSITES PYRIFORMIS Hall.....	211
1. Transverse section. × 1.	
2. Same. × 2.	
3. Longitudinal section. × 1.	
4. Same. × 2.	
Helderberg formation, Keyser member, Cumberland.	
Figs. 5-7. FAVOSITES CONICUS Hall.....	212
5, 6. Side view and base of characteristic form.	
7. Longitudinal section of several cells. × 2.	
Helderberg formation, Becraft member, cut of B. & O. R. R. through North Mountain, W. Va.	
Figs. 8, 9. FAVOSITES BASALTIUS Goldfuss.....	212
8. Portion of corallum.	
9. Enlargement of several cells. × 2.	
Helderberg formation, Cumberland.	



1



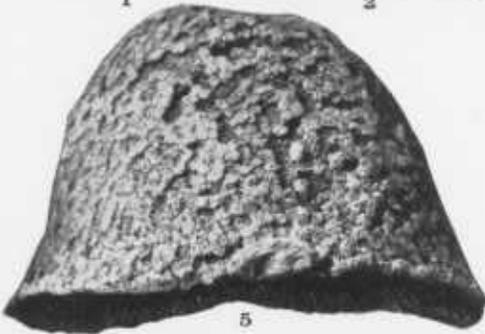
2



3



4



5



7



6



9



8

CELENTERATA—ANTHOZOA

PLATE XXIV

	PAGE
Figs. 1, 2. FAVOSITES FAVOSUS VAR. INTEGRITABULATUS Swartz n. var.....	214
1. Weathered corallum.	
2. Longitudinal section of several cells.	
Helderberg formation, Keyser member, Warrior Mountain, Allegany County.	
Figs. 3-6. FAVOSITES ? SCHRIVERI (Herzer).....	214
3, 4. Upper and side views of enlarged base of corallum.	
5, 6. Fragments of branches.	
Oriskany formation, Ridgely member, opposite Keyser, W. Va.	



1

2



3



5



4



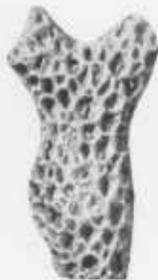
6

COELENTERATA—ANTHOZOA

PLATE XXV

PAGE

- Figs. 1, 2. *STRIATOPORA BELLA* Swartz n. sp. .... 215
1. Portion of a corallum.
  2. Branching corallum.  $\times 2$ .  
Helderberg formation, New Scotland member, Cherry Run,  
W. Va.
- Fig. 3. *STRIATOPORA* sp. .... 216
- Fragment of a corallum. Helderberg formation, Keyser member,  
Devil's Backbone.
- Figs. 4-7. *CLADOPORA RECTILINEATA* Simpson. .... 216
4. Slab covered with numerous branches. Keyser, W. Va.
  5. A branching corallum. Pinto.
  6. Longitudinal and transverse sections.  $\times 4$ . Four miles northeast  
of Cumberland.
  7. Transverse sections.  $\times 4$ . Same locality.  
Helderberg formation, Keyser member.



2



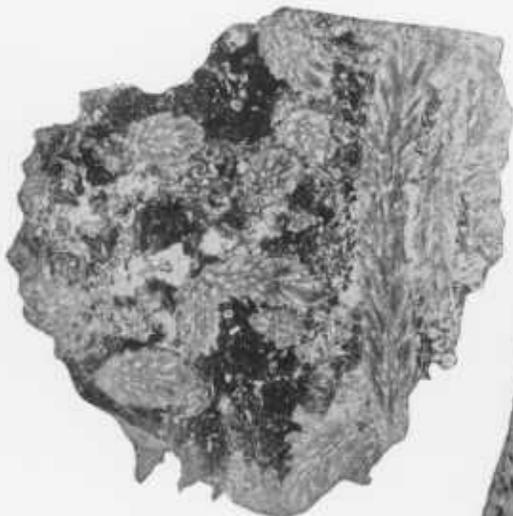
1



3



7



6



5

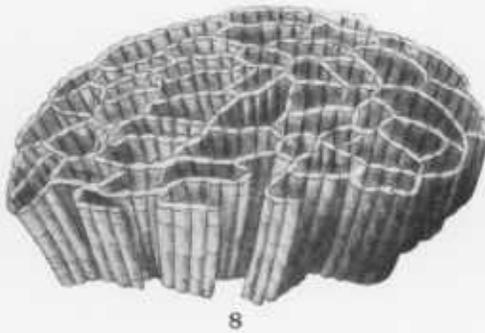


4

CŒLENTERATA—ANTHOZOA

PLATE XXVI

	PAGE
Fig. 1. <i>PLEURODICTYUM LENTICULARE</i> (Hall).....	218
Portion of a corallum. Helderberg formation, New Scotland member, near Cumberland.	
Figs. 2, 3. <i>AULOPORA SCHOHARÆ</i> Hall.....	219
2. Branching corallum attached to a brachiopod.	
3. Several branches. × 3.	
Helderberg formation, Becraft member, Ernstville.	
Figs. 4, 5. <i>AULOPORA SCHUCHERTI</i> Swartz n. sp.....	219
4. View of type.	
5. Enlargement of several branches. × 4.	
Helderberg formation, Keyser member, Cash Valley.	
Figs. 6, 7. <i>CERATOPORA ? MARYLANDICA</i> Swartz n. sp.....	220
6. Slab covered with numerous branches.	
7. Transverse section of a single branch. × 5.	
Helderberg formation, Keyser member, Keyser, W. Va.	
Fig. 8. <i>HALYSITES CATENULATUS</i> Linné.....	220
Corallum showing chain-like branching. Niagara formation, New York.	



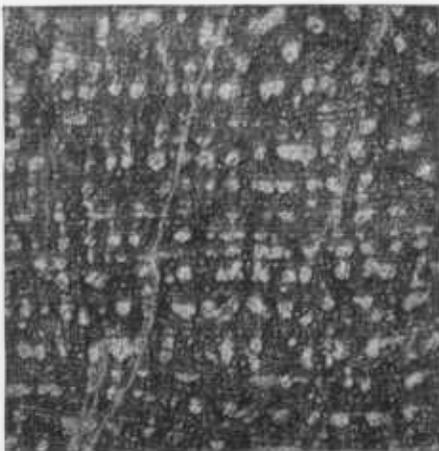
CeLENTERATA—ANTHOZOA

PLATE XXVII

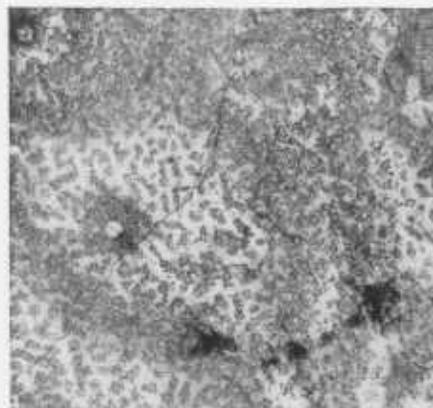
	PAGE
Figs. 1-6. STROMATOPORA CONSTELLATA Hall.....	221
1, 2. Type A. Tangential and radial sections. × 10. Lower Stromatopora bed, Devil's Backbone.	
3. Type B. Tangential section. × 10. Keyser, W. Va.	
4. Type B. Tangential section. × 10. Cash Valley.	
5, 6. Type C. Tangential and radial sections. × 10. East bank of Potomac River opposite Pinto. Helderberg formation, Keyser member.	



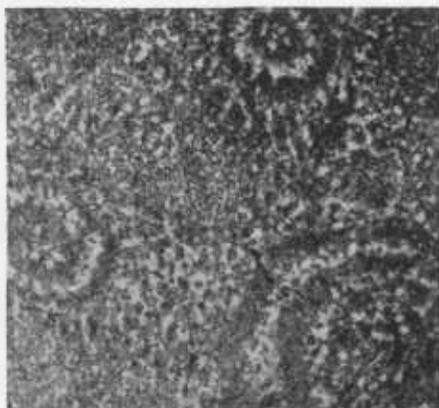
1



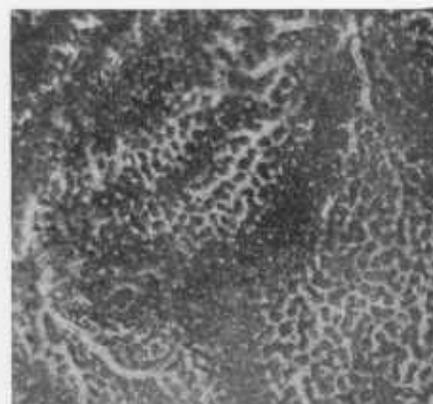
2



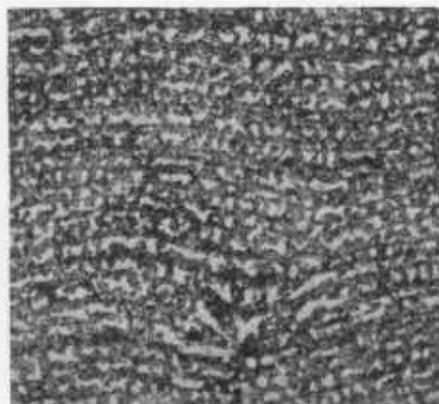
3



4



5

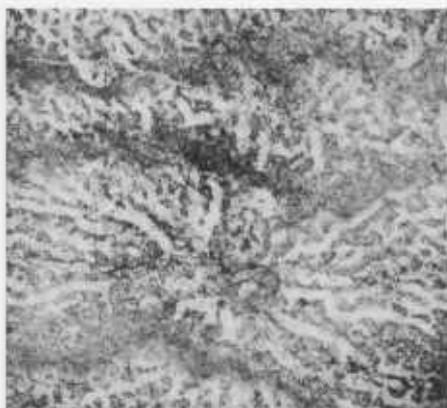


6

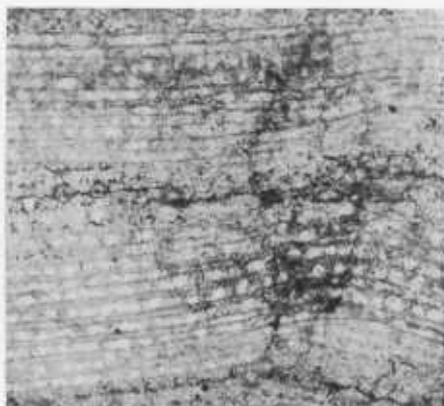
CELENERATA—HYDROZOA

PLATE XXVIII

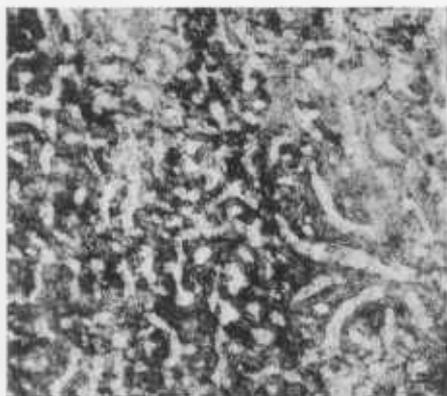
	PAGE
Figs. 1, 2. <i>STROMATOPORA CONSTELLATA</i> Hall.....	221
Type C. Tangential and radial sections (thin sections). Showing very large and intricately branched astorhizæ. Helderberg formation, Keyser member, Cumberland.	
Figs. 3, 4. <i>SYRINGOSTROMA BARRETTI</i> Girty.....	224
3. Section obliquely tangential. $\times 10$ .	
4. Section obliquely radial. $\times 10$ . Branch of <i>Cladopora rectilineata</i> (Simpson) at edge.	
Helderberg formation, Keyser member, Cookerly, Stromatopora bed.	
Figs. 5, 6. <i>SYRINGOSTROMA CENTROTUM</i> Girty.....	225
5, 6. Tangential and radial sections. $\times 10$ . Helderberg formation, base of Keyser member, Warrior Mountain, Allegany County.	



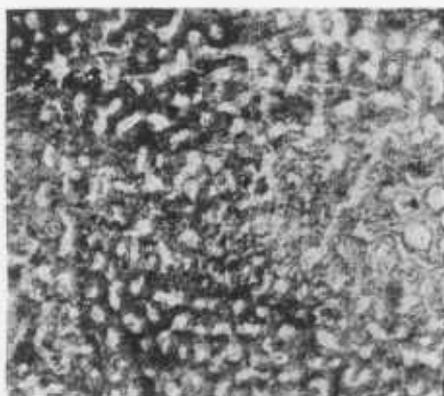
1



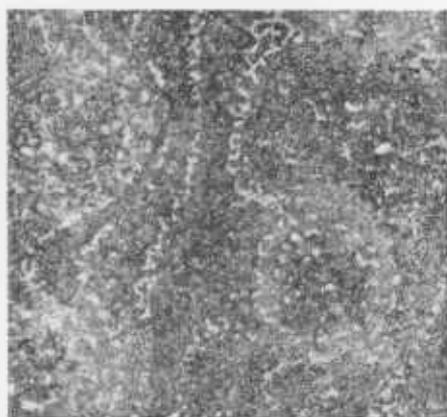
2



3



4



5



6

CŒLENERATA—HYDROZOA

PLATE XXIX

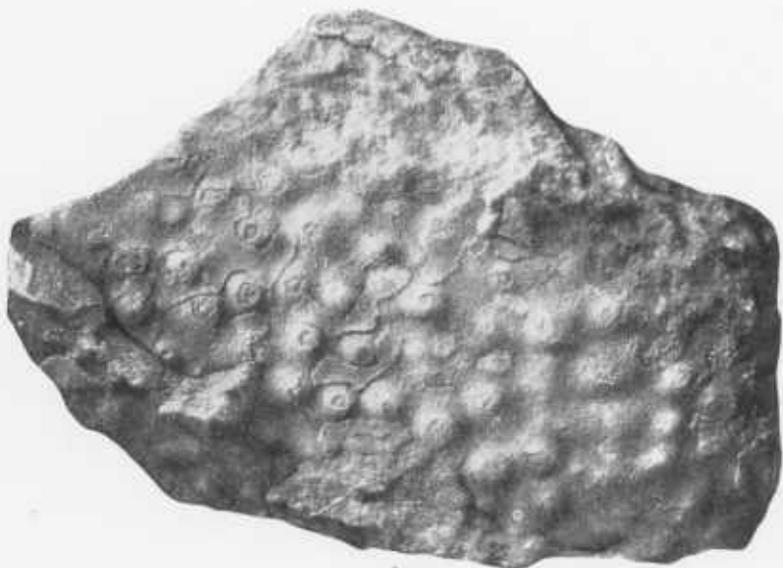
	PAGE
Fig. 1. STROMATOPORA CONSTELLATA Hall.....	221
Type A. Portion of a reef formed of this species. $\times \frac{1}{8}$ . Helderberg formation, Keyser member, Cumberland.	



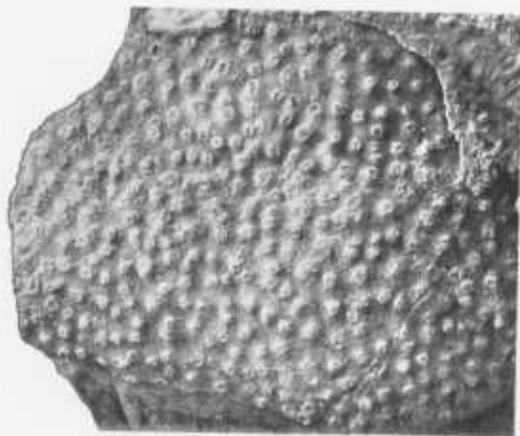
CELENERATA—HYDROZOA

PLATE XXX

	PAGE
Fig. 1. STROMATOPORA CONSTELLATA Hall.....	221
Type C. View of surface showing mamelons and astorhizæ. Helderberg formation, Keyser member, Devil's Backbone, Stromatopora bed.	
Fig. 2. SYRINGOSTROMA CENTROTUM Girty.....	225
View of surface showing numerous small mamelons. Helderberg formation, Keyser member, Warrior Mountain, Allegany County.	



1



2

CŒLENERATA—HYDROZOA

PLATE XXXI

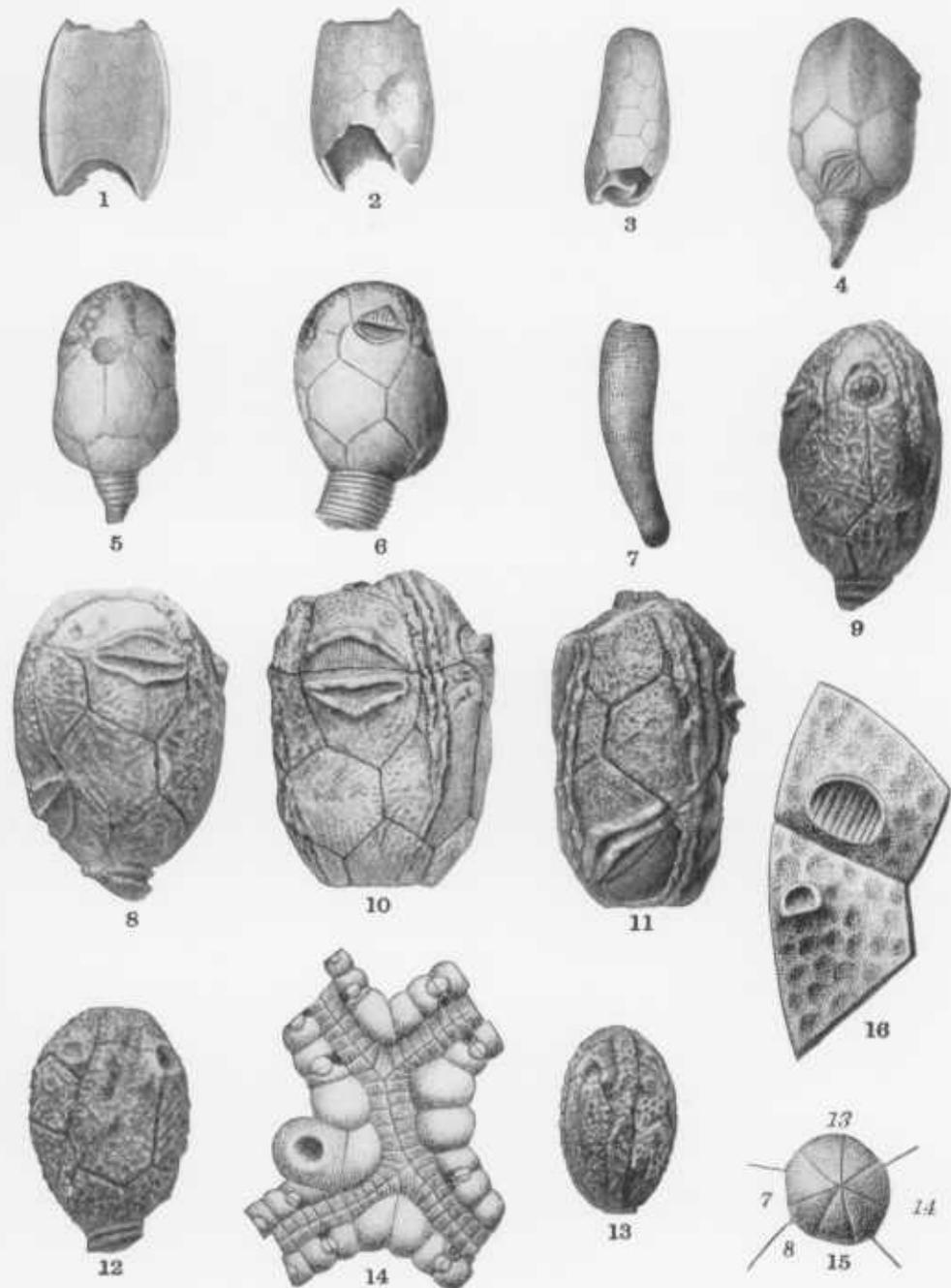
	PAGE
Figs. 1-5. CAMAROCRINUS STELLATUS Hall.....	227
1-3. Three transverse cuts through the same bulb; the letters indicate the same wall in the different sections; <i>M</i> , the medio-basal chamber. $\times \frac{2}{3}$ .	
4. Another specimen cut through the center longitudinally; <i>M</i> , medio-basal chamber. $\times \frac{2}{3}$ .	
5. A second bulb cut through the center longitudinally. $\times \frac{2}{3}$ . Helderberg formation, Keyser member, Keyser, W. Va.	



ECHINODERMATA—CYSTOIDEA

PLATE XXXII

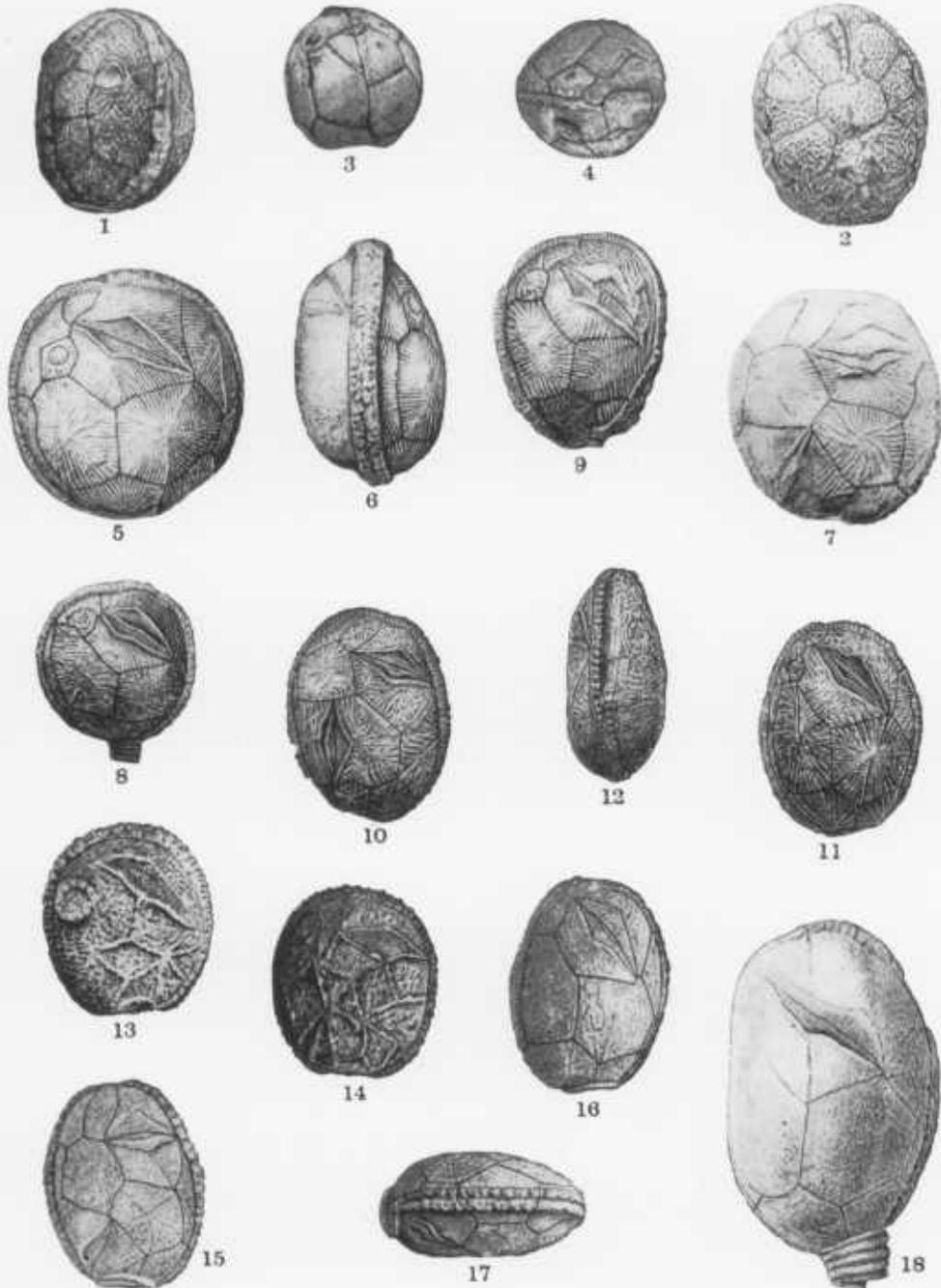
	PAGE
Figs. 1-3. ANOMALOCYSTITES ? DISPARILIS Hall.....	228
1. Anteal or concave side, showing the deeply arched or crescentic form of base with the succeeding plates.	
2. Posteal or convex side, showing the form and arrangement of plates.	
3. Lateral view of the same specimen. Oriskany formation, Ridgely member, Cumberland.	
Figs. 4-7. LEPOCRINITES GERHARDI Conrad.....	229
4. The anterior side, showing the pectinated rhombs at the base.	
5. The posterior side, showing the ovarian aperture with the surrounding plates removed.	
6. The left side of the same specimen. The prominence of the ovarian side over the opposite is well seen.	
7. Base of column, showing slight evidences of rings. Coeymans formation, New York.	
Figs. 8, 9. LEPOCRINITES MANLIUS Schuchert.....	231
Two views of type. × 2. Helderberg formation, Keyser member, Keyser, W. Va.	
Figs. 10, 11. TETRACYSTIS CHRYSALIS Schuchert.....	232
10. View showing upper left-hand pectinirhomb. × 2.	
11. Same specimen from the antanal side. × 2. Helderberg formation, Keyser member, Keyser, W. Va.	
Figs. 12-16. JÆKELOCYSTIS HARTLEYI Schuchert.....	233
12. View of type; a large specimen. Anal opening to the right. × 2.	
13. A smaller specimen with the anal opening to the left. × 2.	
14. Camera-lucida drawing of the oral end to show the arrangement of the ambulacral plates, the ambulacralia (somewhat restored), brachiole attachments, and the plate with the madreporite; the latter lies in the depression of the large plate on the left of the figure. × 2.	
15. The anal pyramid; the positions of the bounding plates, 7, 8, 13, 14, are indicated. × 8.	
16. Plates 14 and 15, with the discrete-pectinirhombs; the dichopores on plate 14 are deeply situated and do not show on the surface. × 8. Helderberg formation, Keyser member, Keyser, W. Va.	



ECHINODERMATA—CYSTOIDEA

PLATE XXXIII

	PAGE
Figs. 1, 2. <i>JÆKELOCYSTIS PAPILLATUS</i> Schuchert.....	234
1. Anal view. × 2.	
2. Antanal view of the type; pectinirhomb 14-15 ls faintly indicated on the left. × 2.	
Helderberg formation, Keyser member, Keyser, W. Va.	
Figs. 3, 4. <i>JÆKELOCYSTIS AVELLANA</i> Schuchert.....	235
3. View of type, with the anal opening to the left and pectinirhomb of plates 14-15 to the right. × 3.	
4. Same specimen from above, showing the two small discrete-pectinirhombs, the central madreporite, and the large anal opening. × 3.	
Helderberg formation, Keyser member, Keyser, W. Va.	
Figs. 5-9. <i>PSEUDOCRINITES GORDONI</i> Schuchert.....	236
5, 6. Two views of type, a specimen somewhat larger than usual.	
7. Another specimen.	
8. A smaller but adult individual of the rounder variety.	
9. An elongate individual, somewhat abnormal in having the ambulacra drawn over on the anal side more than is usual.	
Helderberg formation, Keyser member, Keyser, W. Va.	
Figs. 10-12. <i>PSEUDOCRINITES ABNORMALIS</i> Schuchert.....	238
10. View of the sides having the abnormal position of the lower pectinirhomb.	
11. Opposite side of the same specimen.	
12. End view of same.	
Helderberg formation, Keyser member, Keyser, W. Va.	
Figs. 13, 14. <i>PSEUDOCRINITES STELLATUS</i> Schuchert.....	239
Two side views of type. Helderberg formation, Keyser member, Keyser, W. Va.	
Figs. 15-18. <i>PSEUDOCRINITES CLARKI</i> Schuchert.....	240
15-17. Three views of type, an average adult individual.	
18. A very large specimen of this species. The plates around the pectinirhomb are somewhat broken.	
Helderberg formation, Keyser member, Keyser, W. Va.	



ECHINODERMATA—CYSTOIDEA

PLATE XXXIV

	PAGE
Figs. 1, 2. PSEUDOCRINITES SUBQUADRATUS Schuchert.....	237
Two views of type. × 2. Helderberg formation, Keyser member, Devil's Backbone.	
Figs. 3, 4. PSEUDOCRINITES ELONGATUS Schuchert.....	241
Two views of the type. Helderberg formation, Keyser member, Martin Mountain, Bedford County, Penna.	
Figs. 5-7. PSEUDOCRINITES PERDEWI Schuchert.....	242
5. Side view of a young specimen. × 2.	
6, 7. Two views of type.	
Helderberg formation, Keyser member, Keyser, W. Va.	
Figs. 8-10. TRIMEROCYSTIS PECULIARIS Schuchert.....	244
8. View of type from anal side.	
9, 10. Same specimen from side.	
Helderberg formation, Keyser member, Keyser, W. Va.	
Figs. 11, 12. SPHÆROCYSTITES MULTIFASCIATUS Hall.....	245
11. A large specimen, from anal side; most of the sculpturing con- sists of the ambulacral branches. × 2.	
12. The same individual from above. × 2.	
Helderberg formation, Keyser member, Cash Valley.	
Figs. 13, 14. SPHÆROCYSTITES GLOBULARIS Schuchert.....	247
The type seen from anal side and above. × 2. Helderberg formation, Keyser member, Keyser, W. Va.	



1



2



3



4



5



6



7



8



10



13



9



11



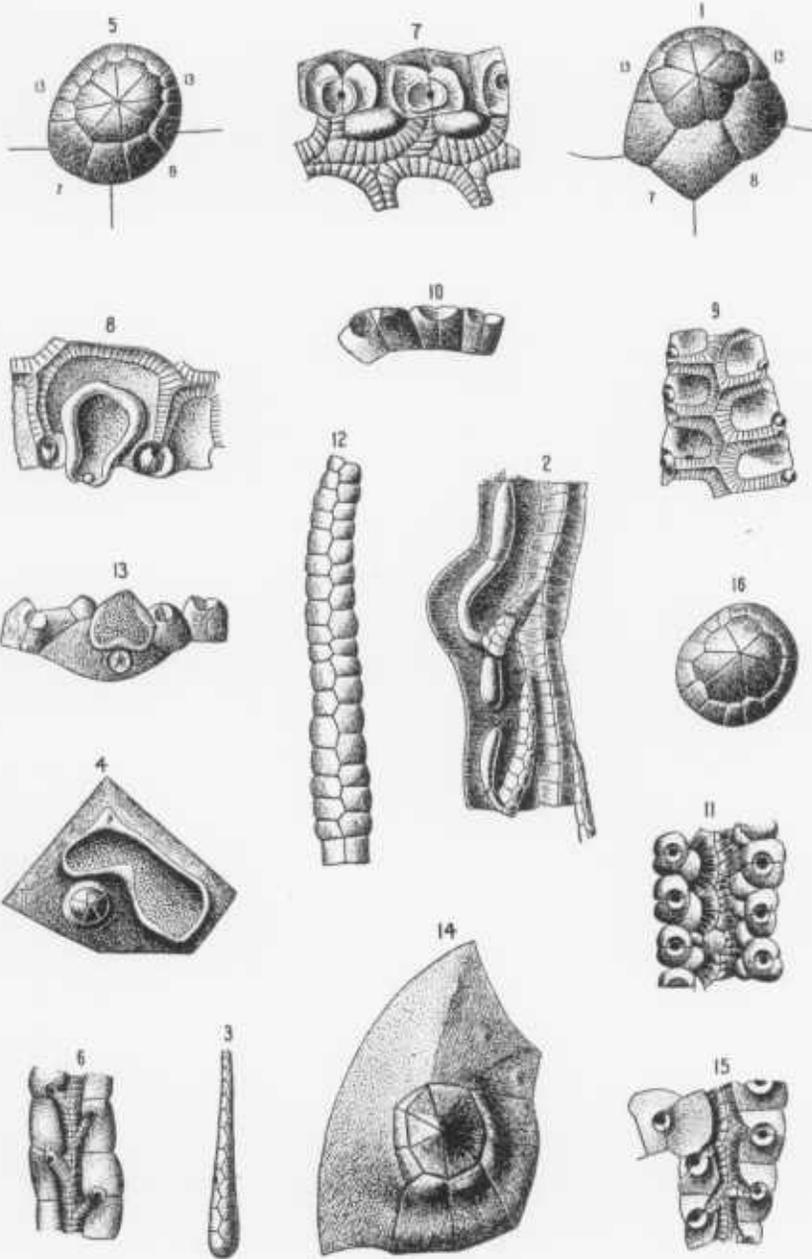
14



12

PLATE XXXV

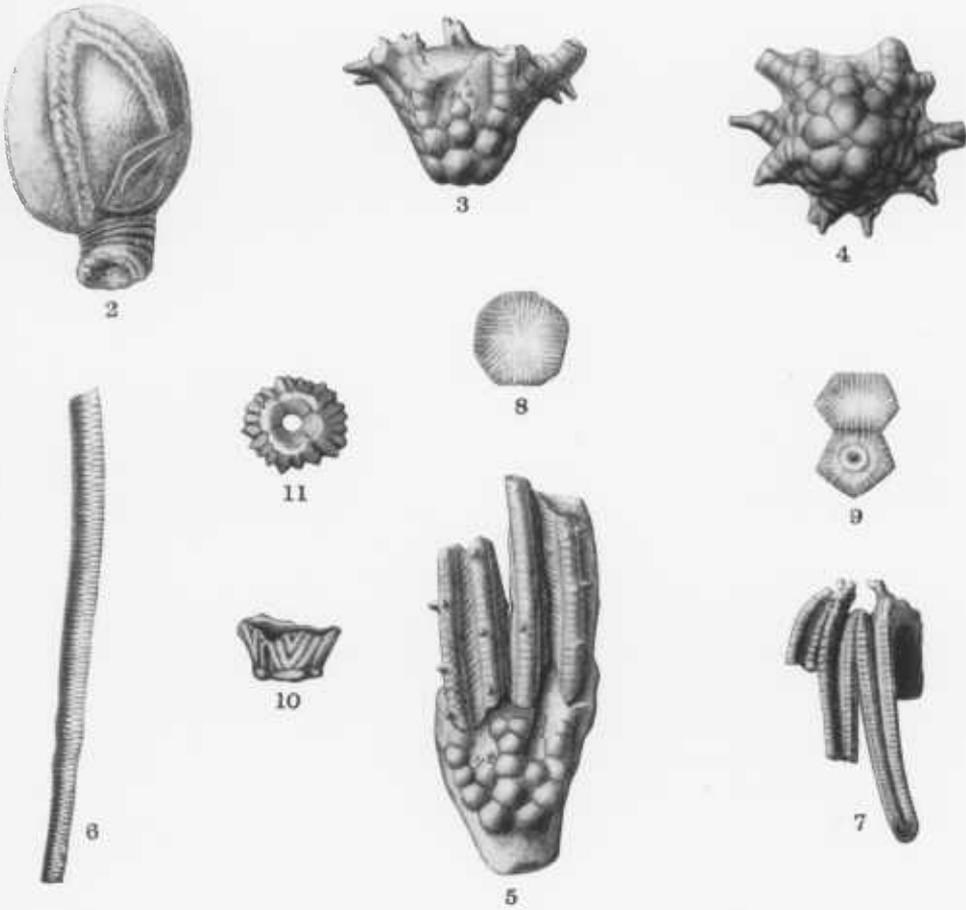
	PAGE
Figs. 1-4. <i>SPHÆROCYSTITES MULTIFASCIATUS</i> Hall.....	245
1. The two circles of plates composing the anal pyramid; the numbers indicate the bounding thecal plates. About $\times 5$ .	
2. Part of an ambulacrum, showing one row of ambulacral plates, the ambulacralia, and remnants of brachioles. About $\times 10$ .	
3. An incomplete brachiole. About $\times 10$ .	
4. Deltoid 23, with the madreporite and hydropore closed by its pyramid. About $\times 10$ .	
Figs. 5, 6. <i>SPHÆROCYSTITES GLOBULARIS</i> Schuchert.....	247
5. The anal pyramid and the bounding thecal plates indicated by numbers. About $\times 5$ .	
6. Part of an ambulacrum, showing the ambulacral and ambulacralia plates, and the points of attachment for the brachioles. About $\times 5$ .	
Fig. 7. <i>PSEUDOCRINITES STELLATUS</i> Schuchert.....	239
Part of an ambulacrum, showing one row of ambulacral plates, the brachiole facets, and the ambulacralia with their intermediate large plates. About $\times 5$ .	
Figs. 8-10. <i>PSEUDOCRINITES PERDEWI</i> Schuchert.....	242
8. Deltoid 23, with the madreporite and the small hydropore; the double row of small plates and the ambulacralia. About $\times 5$ .	
9. Portion of an ambulacrum in a young specimen. About $\times 5$ .	
10. Same as fig. 9; seen from the side to show the high elevation of ambulacralia. About $\times 5$ .	
Figs. 11-13. <i>PSEUDOCRINITES GORDONI</i> Schuchert.....	236
11. Portion of an ambulacrum. About $\times 5$ .	
12. A nearly complete brachiole. About $\times 5$ .	
13. Deltoid 23 crowded into the ambulacral plates, showing the madreporite and hydropore. About $\times 5$ .	
Fig. 14. <i>PSEUDOCRINITES CLARKI</i> Schuchert.....	240
Plate 13 on the left and the incomplete circle of 7 small plates bounding the anal pyramid of 7 pieces. About $\times 5$ .	
Figs. 15-16. <i>LEPOCRINITES MANLIUS</i> Schuchert.....	231
15. An ambulacrum near the oral opening. About $\times 5$ .	
16. The two circles of pieces composing the anal pyramid. About $\times 5$ .	



ECHINODERMATA—CYSTOIDEA

PLATE XXXVI

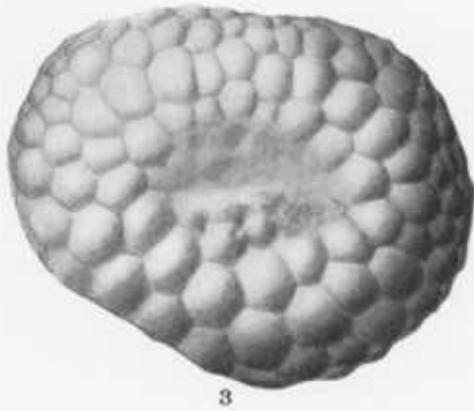
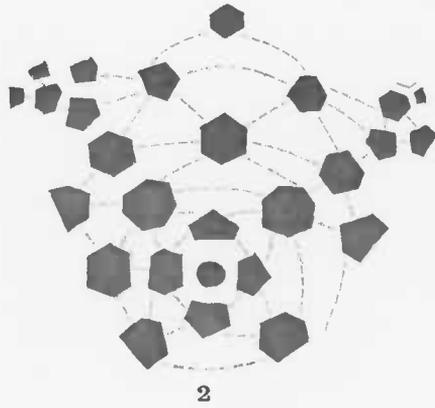
	PAGE
Fig. 1. <i>SPHÆROCYSTITES GLOBULARIS</i> Schuchert.....	247
The entire stalk, terminating in the roots at one end, and at the other preserving a few of the thecal plates, seen from the interior. Helderberg formation, Keyser member, Devil's Backbone.	
Fig. 2. <i>SPHÆROCYSTITES GLOBULARIS</i> VAR. <i>OVALIS</i> Schuchert.....	248
Specimen seen from the side. × 2. Helderberg formation, Keyser member, Keyser, W. Va.	
Figs. 3-7. <i>THYSANOCRINUS EUGENIUS</i> Ohern, n. sp.....	249
3, 4. Side and inferior view of calyx.	
5. Side view of calyx showing bases of arms.	
6. Exterior view of an arm.	
7. Interior view of bases of arms.	
Oriskany formation, Ridgely member, Cumberland.	
Figs. 8, 9. <i>TECHNOCRINUS STRIATUS</i> (Hall).....	250
8. Plate belonging to this species.	
9. The basal plates anchylosed together with a small portion of the column attached, and also one first radial plate.	
Oriskany formation, Ridgely member, Cumberland. (After Hall.)	
Figs. 10, 11. <i>TECHNOCRINUS SCULPTUS</i> Hall.....	250
Basal and lateral view of the lower part of the body. Oriskany formation, Ridgely member, Cumberland. (After Hall.)	



ECHINODERMATA—CYSTOIDEA—CRINOIDEA

PLATE XXXVII

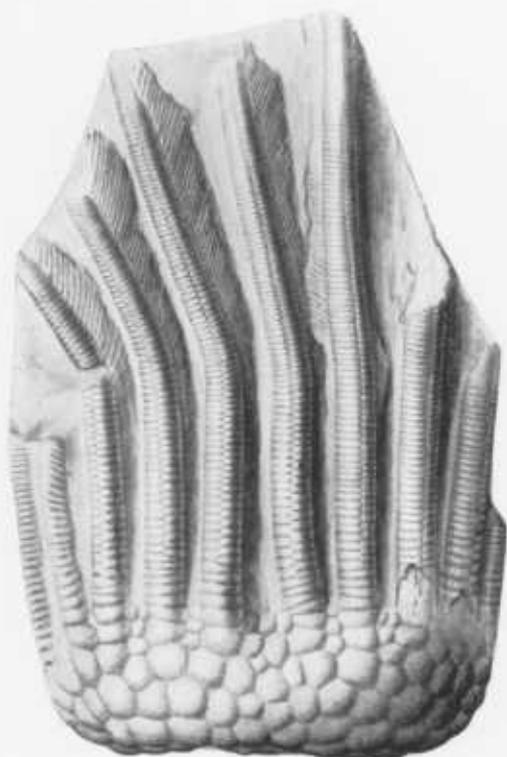
	PAGE
Figs. 1, 2. <i>TECHNOCRINUS SPINULOSUS</i> (Hall).....	251
1. The body and bases of the arms with a portion of the column attached.	
2. Diagram of the structure of the body to the base of the arms, as far as determined. Oriskany formation, Ridgely member, Cumberland. (After Hall.)	
Figs. 3-5. <i>TECHNOCRINUS ? LEPIDUS</i> Ohern n. sp.....	252
3. Inferior view of calyx.	
4. Cast of interior of calyx.	
5. Side view of interior of calyx. Oriskany formation, Ridgely member, near Berkeley Springs, W. Va.	



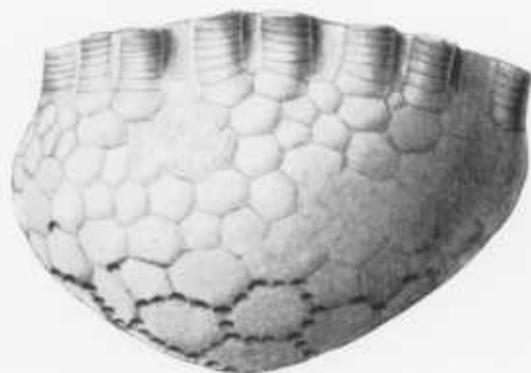
ECHINODERMATA—CRINOIDEA

PLATE XXXVIII

	PAGE
Fig. 1. <i>TECHNOCRINUS ? LEPIDUS</i> Ohern n. sp.....	252
Side view of calyx and lower part of arms. Oriskany formation, Ridgely member, near Hancock.	
Fig. 2. <i>TECHNOCRINUS ANDREWSI</i> (Hall).....	251
Side view of calyx and base of arms. Oriskany formation, Ridgely member, Hancock.	



1



2

ECHINODERMATA—CRINOIDEA

PLATE XXXIX

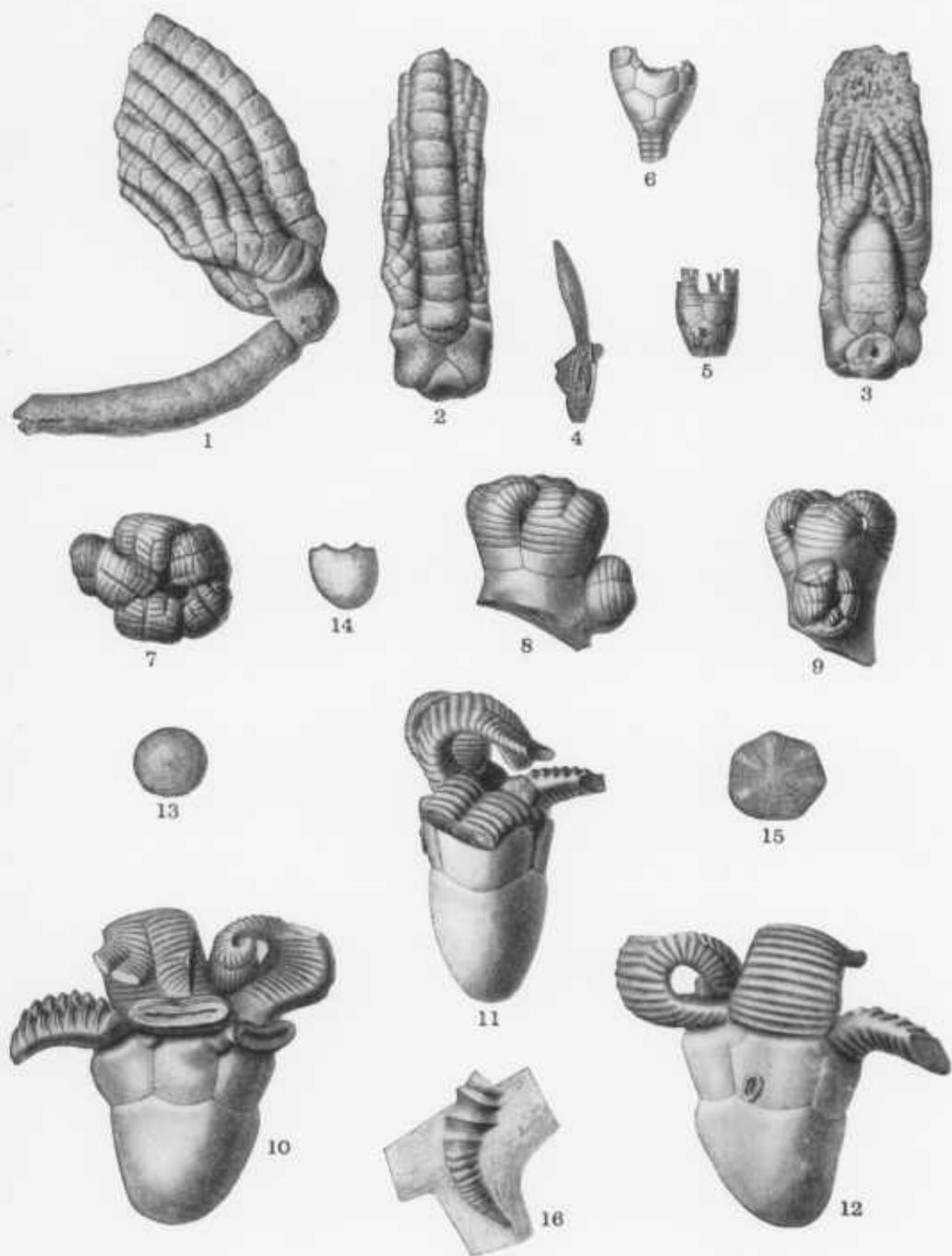
	PAGE
Fig. 1. <i>TECHNOCRINUS ? LEPIDUS</i> Ohern n. sp. ....	252
Nearly complete specimen showing calyx and arms. $\times \frac{2}{3}$ . Oriskany formation, Ridgely member, Berkeley Springs, W. Va.	



ECHINODERMATA—CRINOIDEA

PLATE XL

	PAGE
Figs. 1-3. CALCEOCRINUS MARYLANDICUS Ohern n. sp.....	253
Three views of calyx and base of arms. Oriskany formation, Ridgely member, opposite Keyser, W. Va.	
Figs. 4, 5. HOMOCRINUS PROBOSCIDALIS Hall.....	255
4. View of calyx and base of arms.	
5. Enlargement of same. X 2.	
Oriskany formation, Ridgely member, Cumberland. (After Hall.)	
Fig. 6. HOMOCRINUS HARTLEYI Ohern n. sp.....	255
Side view of calyx. Oriskany formation, Ridgely member, Cumberland.	
Figs. 7-12. EDRIOCRINUS SACCULUS Hall.....	256
7-9. Three views of calyx and arms.	
10-12. Three views of calyx and arms of a larger specimen.	
Oriskany formation, Ridgely member, Cumberland.	
Figs. 13-15. EDRIOCRINUS POCILLIFORMIS Hall.....	257
13. Basal view of a large individual, the proportional length being greater than usual.	
14. Lateral view of the same.	
15. Interior of the same.	
New Scotland formation, New York.	
Fig. 16. CORNULITES CINGULATUS Hall.....	258
Small specimen, enlarged. Helderberg formation, New York.	

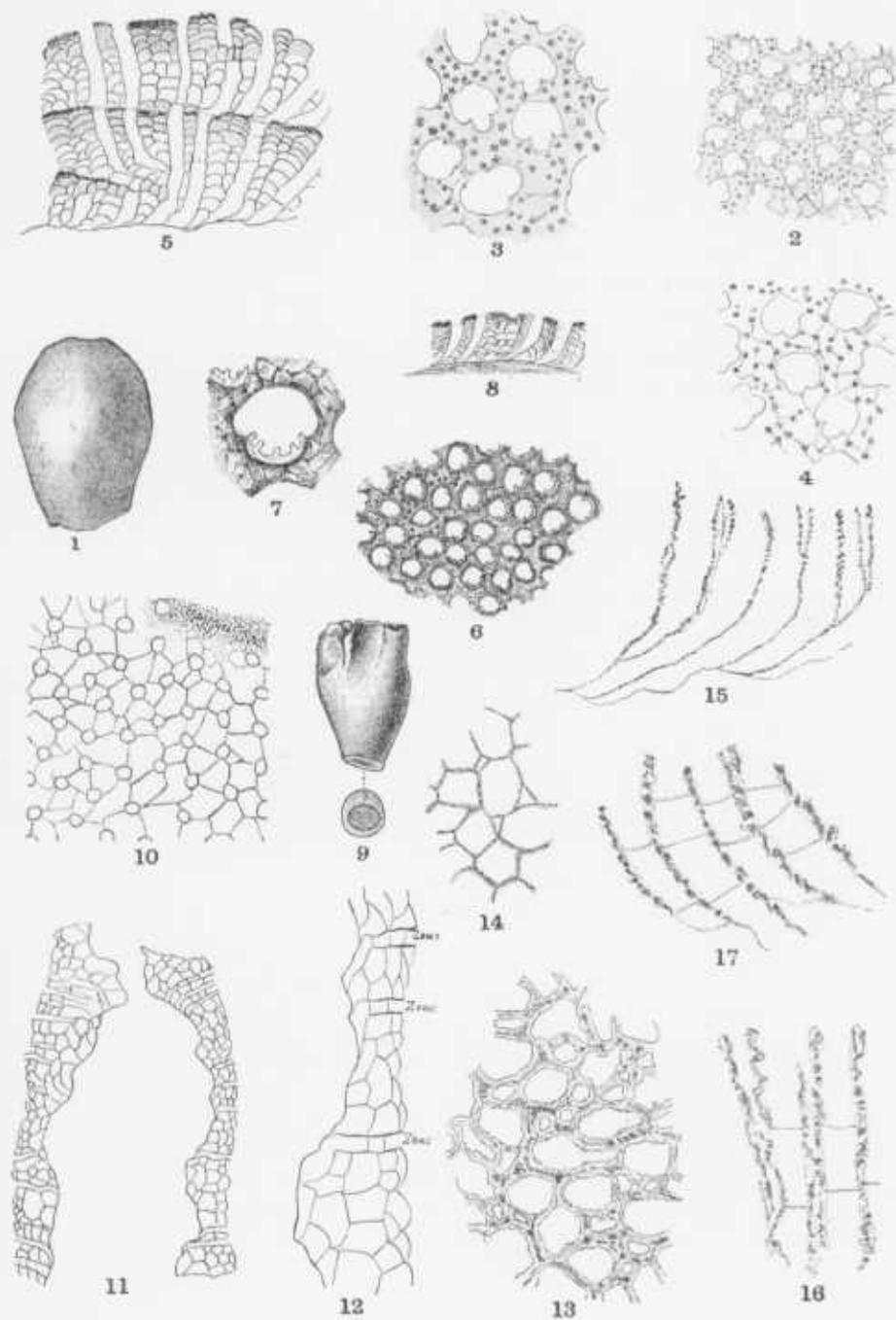


ECHINODERMATA—CRINOIDEA

PLATE XLI

PAOE

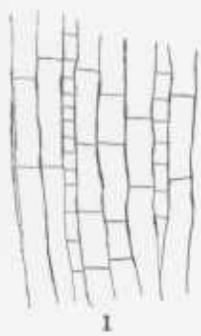
- Figs. 1-5. *FISTULIPORELLA CUMULATA* n. sp. .... 263
1. Side view of a zoarium, natural size.
  2. Tangential section.  $\times 20$ .
  3. A portion of the same tangential section,  $\times 40$ , showing the characters of the mature zone.
  4. Several zoëcia of the same section,  $\times 40$ , from a less mature portion.
  5. Vertical section,  $\times 20$ , showing several layers of zoarium.  
Heiderberg formation, Keyser member, Keyser, W. Va.
- Figs. 6-8. *FISTULIPORELLA QUINQUEDENTATA* n. sp. .... 264
6. Tangential section,  $\times 20$ , of the type specimen.
  7. A zoëcium of the same,  $\times 50$ , showing the structure of the lunarium.
  8. Vertical section of the type,  $\times 20$ .  
Heiderberg formation, Keyser member, Keyser, W. Va.
- Figs. 9-12. *CHILOTRYPA MICROPORA* n. sp. .... 268
9. Zoarium, natural size, with end view of same, showing sack-like form.
  10. Tangential section,  $\times 20$ , exhibiting the very small zoëcia and the rather wide interzoëcial spaces.
  11. Vertical section,  $\times 20$ , through portion of a zoarium illustrating the variation in diameter of the central tube.
  12. A portion of the same vertical section,  $\times 40$ , showing the more minute structure of the zoëcia (zoëc) and vesicles.  
Heiderberg formation, Keyser member, Keyser, W. Va.
- Figs. 13-17. *CERAMOPORA ? INCONDITA* n. sp. .... 260
13. A tangential section,  $\times 12$ , passing through the mature zone where the zoëcia and mesopores are most irregular in shape and arrangement.
  14. A similar section,  $\times 12$ , through an immature portion of the same zoarium.
  15. A vertical section,  $\times 12$ , through both zones of a thin incrusting zoarium in which diaphragms appear to be wanting.
  - 16, 17. Vertical sections,  $\times 12$ , showing the usual characters of the mature region.  
Heiderberg formation, Keyser member, Devil's Backbone.



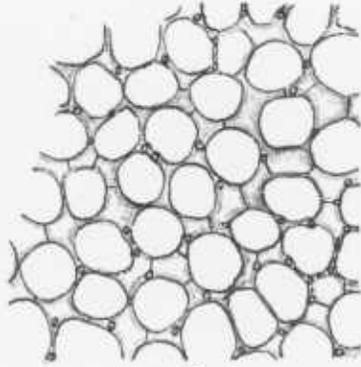
MOLLUSCOIDEA—BRYOZOA

PLATE XLII

	PAGE
Figs. 1-4. <i>STROMATOTRYPA GLOBULARIS</i> n. sp.....	279
1, 2. Two vertical sections, $\times 10$ , one showing the usual features and the second illustrating the closing of a mesopore as the surface is approached.	
3. A tangential section, $\times 20$ , with rounded zoëcia and rather numerous acanthopores and mesopores.	
4. A few zoëcia, $\times 20$ , of a tangential section in which mesopores are few.	
Helderberg formation, Keyser member, Keyser, W. Va.	
Figs. 5-9. <i>CYPNOTRYPA CORRUGATA</i> (Weller).....	269
5. Tangential section, $\times 20$ , showing the simple polygonal zoëcia.	
6, 7. Several zoëcia of the same section, $\times 50$ , illustrating the minute structure of the walls and acanthopores.	
8. A vertical section through an immature and mature zone, $\times 20$ .	
9. Surface of a zoarium, $\times 9$ .	
Helderberg formation, Keyser member, Keyser, W. Va.	
Fig. 10. <i>PTILODICTYA TENELLA</i> n. sp.....	288
Tangential section, $\times 20$ , illustrating the shape of the zoëcia and showing also the inferior hemiseptum as a sharp transverse line in most of the zoëcia. Helderberg formation, Keyser member, Devil's Backbone.	
Figs. 11-16. <i>STENOPORA ? INCRUSTANS</i> n. sp.....	275
11, 12. Tangential sections, $\times 20$ , showing slight variations in the wall structure.	
13, 14. Several zoëcia in thin sections, $\times 50$ , illustrating the structure of the acanthopores and the minute dotting of the walls.	
15. Vertical section, $\times 20$ , through a single layer of zoëcia.	
16. Surface of a specimen, $\times 20$ .	
Helderberg formation, Keyser member, Cash Valley.	



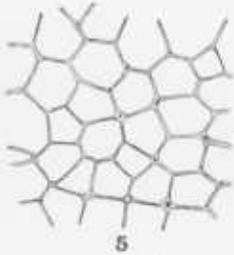
1



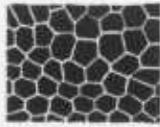
3



2



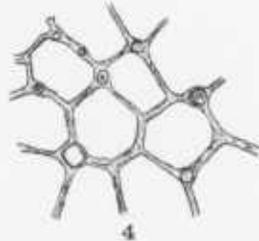
5



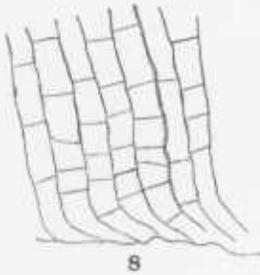
9



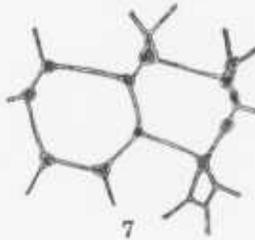
6



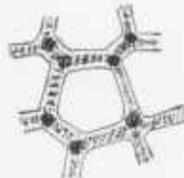
4



8



7



14



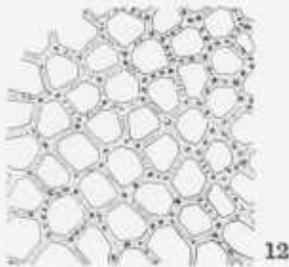
15



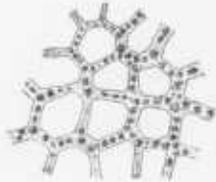
13



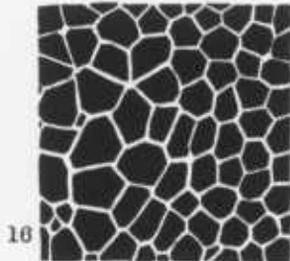
10



12



11



16

PLATE XLIII

	PAGE
Figs. 1-4. <i>LIOCLEMA SUBRAMOSUM</i> n. sp.....	273
1. Vertical section, $\times 20$ .	
2, 3. Tangential section, $\times 20$ , through the mature zone, and a small portion of the same, $\times 50$ , illustrating the structure of the walls and acanthopores.	
4. A tangential section, $\times 20$ , through an early stage of the mature zone where the acanthopores are undeveloped and the zoëcia are thin walled.	
Helderberg formation, Keyser member, Keyser, W. Va.	
Figs. 5-8. <i>ERIDOTRYPA PARVULIPORA</i> n. sp.....	272
5. A tangential section, $\times 20$ .	
6. A portion of another tangential section, $\times 20$ , in which the acanthopores are more numerous.	
7. Several zoëcia of a thin section, $\times 50$ .	
8. A vertical section, $\times 20$ .	
Helderberg formation, Keyser member, Keyser, W. Va.	
Figs. 9-12. <i>LIOCLEMA PULCHELLUM</i> , n. sp.....	274
9, 10. Tangential section, $\times 20$ , and a portion, $\times 35$ , passing through the mature zone.	
11. A vertical section, $\times 20$ .	
12. Surface of the type, $\times 9$ .	
Helderberg formation, Keyser member, Keyser, W. Va.	
Figs. 13-16. <i>FISTULIPORELLA MINIMA</i> n. sp.....	265
13. Side view of a zoarium, natural size.	
14. Tangential section, $\times 20$ .	
15. A zoëcium of the same section, $\times 50$ .	
16. A vertical section, $\times 20$ , through two layers of zoëcia.	
Helderberg formation, Keyser member, Keyser, W. Va.	

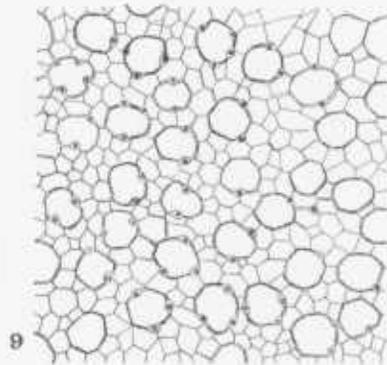
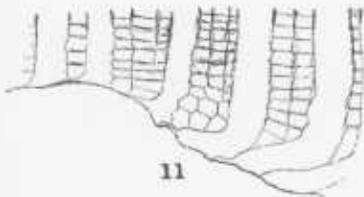
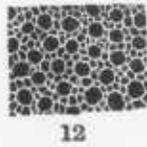
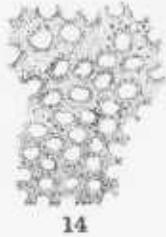
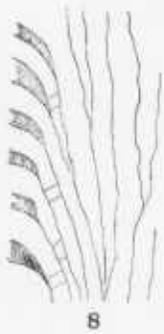
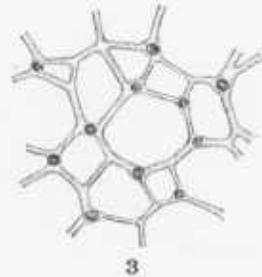
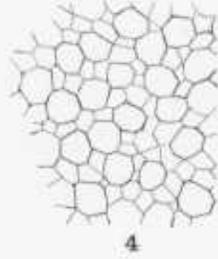
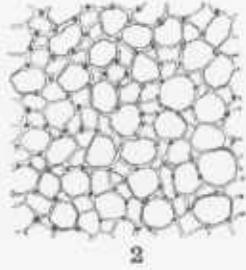
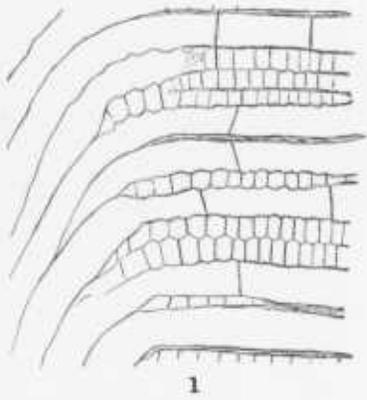


PLATE XLIV

	PAGE
Figs. 1-3. CERAMOPORA ? INCONDITA n. sp.....	260
1. View of a small zoarium, $\times 1.5$ , incrusting a Favosites.	
2, 3. Surface of same, $\times 3$ and $\times 9$ , respectively.	
Helderberg formation, Keyser member, Devil's Backbone.	
Fig. 4. CYPHOTRYPA CORRUGATA (Weller).....	269
Side view of a hemispheric zoarium with the edge broken away, $\times 1.25$ .	
Helderberg formation, Keyser member, Pinto.	
Fig. 5. LIOCLEMA SUBRAMOSUM n. sp.....	273
Fragment of a zoarium, $\times 1.5$ . Helderberg formation, Keyser mem-	
ber, Keyser, W. Va.	
Fig. 6. STENOPORA ? INCRUSTANS n. sp.....	275
A zoarium, incrusting a specimen of Favosites, $\times 1.25$ . Helderberg	
formation, Keyser member, Cash Valley.	
Figs. 7-8. ERIDOTRYPA PARVULIPORA n. sp.....	272
7. Portion of small slab, $\times 1.25$ , showing several fragments of this	
species.	
8. Surface of one of the specimens, $\times 9$ .	
Helderberg formation, Keyser member, Keyser, W. Va.	



2



3



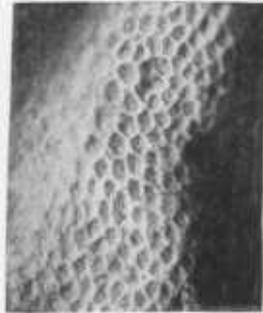
1



4



6



8



7

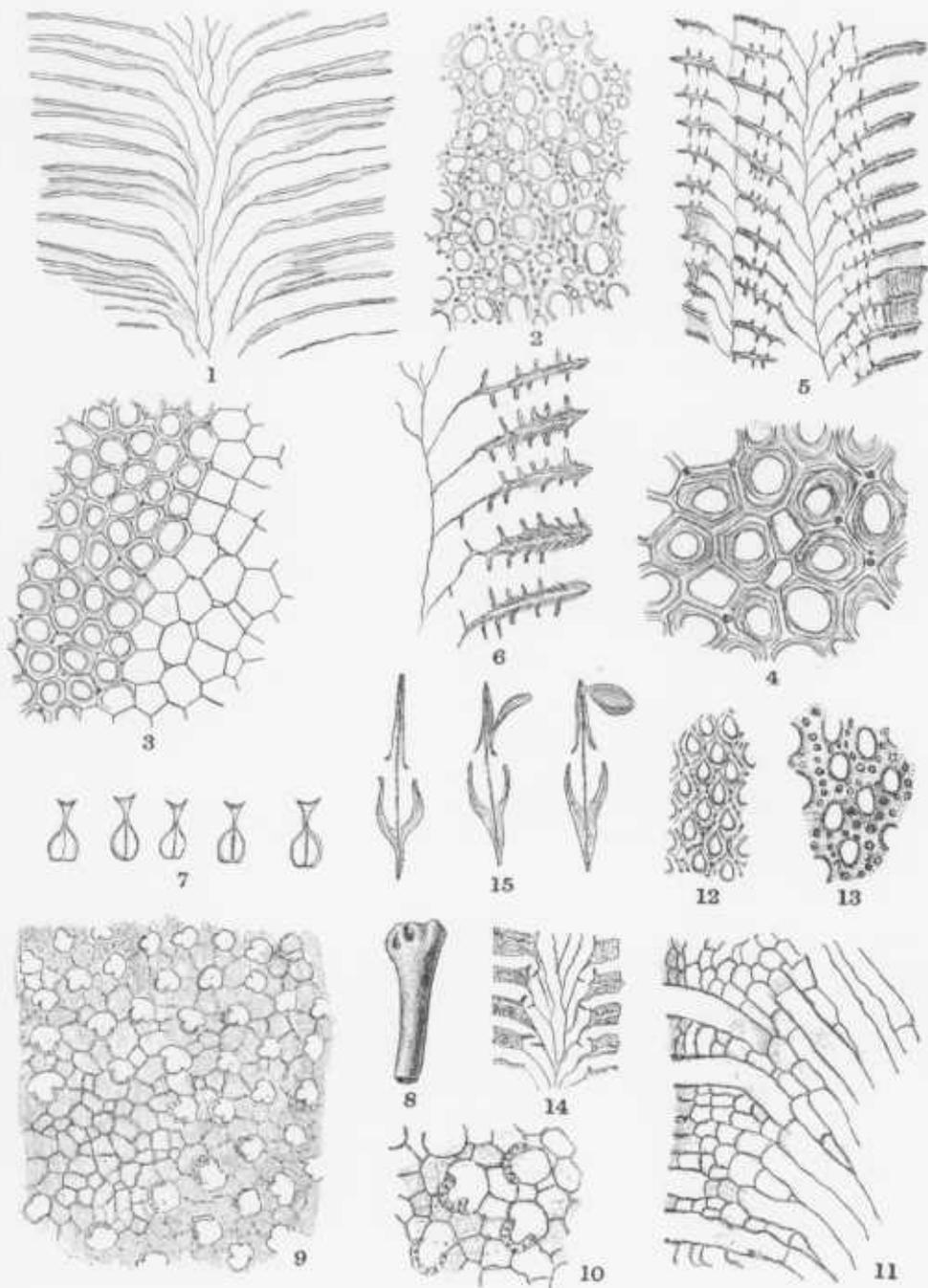


5

MOLLUSCOIDEA—BRYOZOA

PLATE XLV

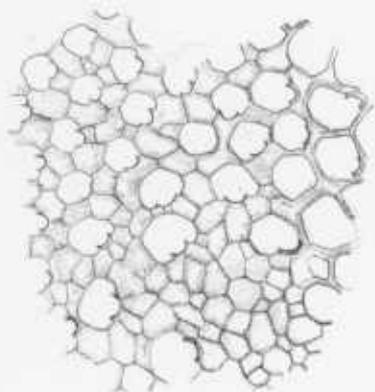
	PAGE
Figs. 1, 2. <i>BATOSTOMELLA INTERPOROSA</i> n. sp. ....	270
1. Vertical section, $\times 20$ , through the center of a branch.	
2. Tangential section, $\times 20$ , showing the numerous acanthopores and mesopores. Helderberg formation, Keyser member, Devil's Backbone, Maryland.	
Figs. 3-6. <i>DIPIOSTENOPORA SILURIANA</i> (Weller).....	277
3. Tangential section, $\times 20$ , cutting both mature and immature region.	
4. Portion of mature region of the same section, $\times 35$ .	
5. Vertical section, $\times 20$ , with a second layer of zoecia on the left.	
6. One-half of the same, $\times 35$ , illustrating the wall structure and perforated diaphragms in more detail. Helderberg formation, Keyser member, Devil's Backbone.	
Fig. 7. <i>SEMICOSCINIUM PLANUM</i> n. sp. ....	285
Transverse section of the type specimen, $\times 12$ , introduced to show the expanded carina. Helderberg formation, Keyser member, Hyndman, Penna.	
Figs. 8-11. <i>FISTULIPORELLA MARYLANDICA</i> n. sp. ....	266
8. Portion of a rather narrow zoarium, natural size.	
9. Tangential section, $\times 20$ , passing through a macula and adjoining zoecia.	
10. Several zoecia of the same section, $\times 35$ , exhibiting granular structure of lunarium.	
11. Vertical section, $\times 20$ , showing a portion of a solid branch. Helderberg formation, Keyser member, Cash Valley.	
Figs. 12-14. <i>ORTHOPORA RHOMBIFERA</i> Hall.....	286
12. Tangential section, $\times 20$ , illustrating quincuncial arrangement and rhomboidal shape of zoecia in an average example.	
13. Tangential section of an old zoarium, $\times 30$ .	
14. Vertical section, $\times 20$ . Helderberg formation, Keyser member, Devil's Backbone.	
Fig. 15. <i>FENESTELLA (CYCLOPORINA) ALTIDORSATA</i> n. sp. ....	282
Transverse section, $\times 12$ , showing the carinated obverse and reverse slides and the ovicell-like structure on the sides of the carina. Helderberg formation, Keyser member, Devil's Backbone.	



MOLLUSCOIDEA—BRYOZOA

PLATE XLVI

	PAGE
Fig. 1. RHOPALONARIA ATTENUATA Ulrich and Bassler.....	259
The excavations left by a portion of a colony upon an auloporoid, $\times 9$ . Helderberg formation, Keyser member, Cash Valley.	
Fig. 2. ASCODICTYON SILURIENSE Vine.....	260
Eight groups of vesicles, $\times 9$ , attached to a brachiopod. Helderberg formation, Keyser member, Cash Valley.	
Figs. 3-7. FISTULIPORELLA MAYNARDI n. sp.....	266
3. A slightly oblique tangential section, $\times 20$ , illustrating the struc- ture of the outer ridge-like walls on one edge of the drawing and the usual zoëcia and mesopores elsewhere.	
4. Tangential section, $\times 20$ , through the outermost part of the zoarium.	
5. Vertical section, $\times 20$ , through two layers of zoëcia but not includ- ing the outer ridge-like wall in either layer.	
6. Surface view of zoëcia, $\times 9$ , with crested walls and overarching lunaria well developed.	
7. View of another portion of the same specimen, $\times 9$ , in which the ridge-like outer wall is shown only in one corner. Helderberg formation, Keyser member, Cash Valley.	
Figs. 8-9. STROMATOTRYPA GLOBULARIS n. sp.....	279
8. Side view of a zoarium, natural size, showing a portion of the wrinkled base.	
9. Surface of zoarium, $\times 9$ . Helderberg formation, Keyser member, Keyser, W. Va.	



3



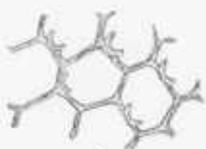
1



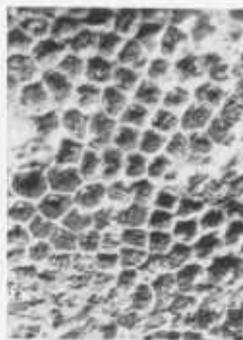
2



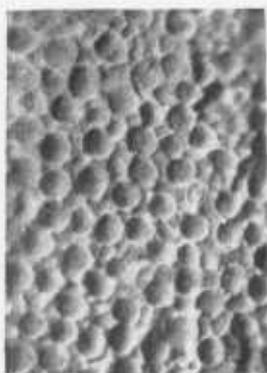
5



4



6



9



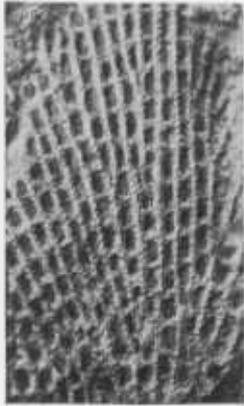
8



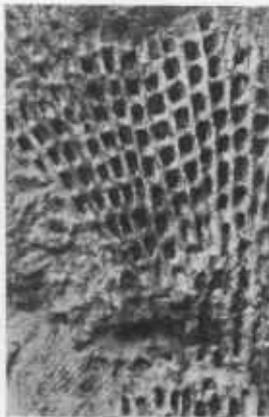
7

PLATE XLVII

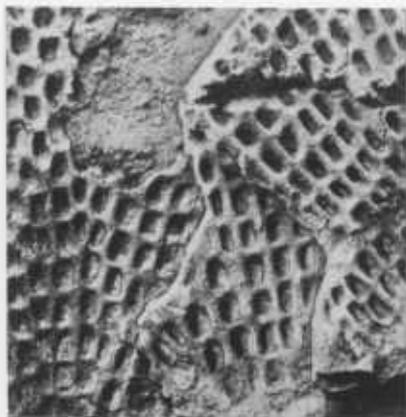
	PAGE
Figs. 1, 2. <i>FENESTELLA CUMBERLANDICA</i> n. sp.....	280
1. Obverse face, $\times 5$ .	
2. Reverse face, $\times 5$ .	
Helderberg formation, Keyser member, Cash Valley.	
Fig. 3. <i>POLYORA DICTYOTA</i> n. sp.....	283
Reverse face of the type specimen, $\times 5$ . Helderberg formation, Keyser member, Devil's Backbone.	
Figs. 4-6. <i>THAMNISCUS REGULARIS</i> n. sp.....	286
4, 6. Celluliferous and non-celluliferous face respectively of the two type specimens, $\times 1.5$ .	
6. Enlargement of a portion of fig. 4, $\times 5$ .	
Helderberg formation, Keyser member, Devil's Backbone.	



1



2



3



4



5



6

MOLLUSCOIDEA—BRYOZOA

PLATE XLVIII

	PAGE
Figs. 1-3. <i>DIPLOSTENOPORA SILURIANA</i> (Weller).....	277
1. An incomplete zoarium of average size, $\times 1.5$ , with low monticules.	
2. A more robust incomplete, smooth zoarium, $\times 1.5$ .	
3. Surface of specimen shown in fig. 1, $\times 9$ .	
Helderberg formation, Keyser member, Cash Valley.	
Fig. 4. <i>FISTULIPORELLA MARYLANDICA</i> n. sp.....	266
Surface of a zoarium, $\times 6$ , exhibiting the well-marked solid maculæ.	
Helderberg formation, Keyser member, Cash Valley.	
Fig. 5. <i>BATOSTOMELLA INTERPOROSA</i> n. sp.....	270
One of the type specimens, $\times 5$ . Helderberg formation, Keyser member, Devil's Backbone.	
Fig. 6. <i>ORTHOPORA RHOMBIFERA</i> Hall.....	286
Surface of a slab, $\times 5$ , showing numerous fragments of this species.	
Helderberg formation, Keyser member, Cash Valley.	
Figs. 7, 8. <i>PTILODICTYA TENELLA</i> n. sp.....	288
7. Incomplete specimen, $\times 5$ .	
8. Surface of same, $\times 9$ .	
Helderberg formation, Keyser member, Devil's Backbone.	



1



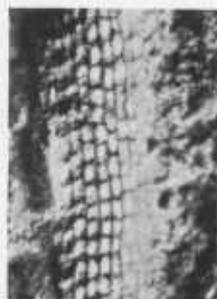
2



3



4



5



6



7

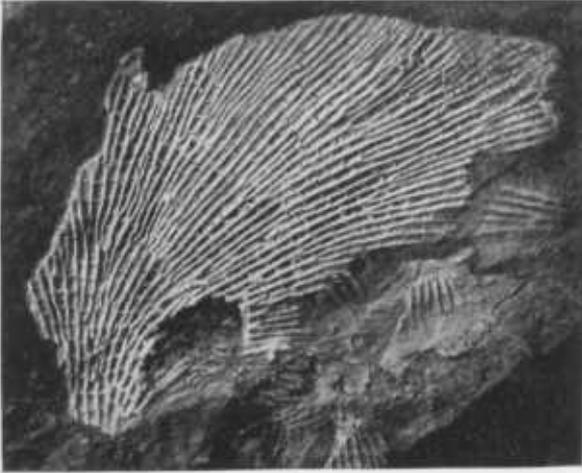


8

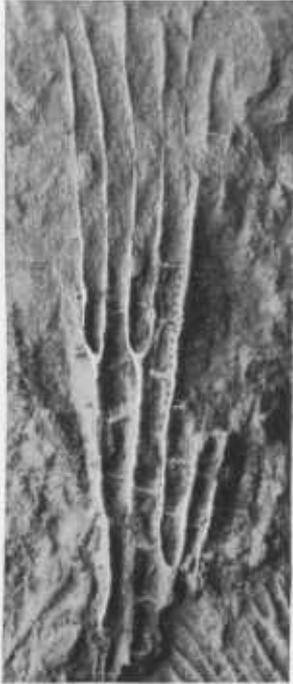
MOLLUSCOIDEA—BRYOZOA

PLATE XLIX

	PAGE
Figs. 1-3. FENESTELLA (CYCLOPORINA) ALTIDORSATA n. sp.....	282
1. An incomplete, well-preserved frond, $\times 1.5$ .	
2. Surface of a slab, $\times 2$ , with specimens showing both obverse and reverse sides.	
3. A third specimen, $\times 5$ , exhibiting the celluliferous face. Helderberg formation, Keyser member, Devil's Backbone.	
Fig. 4. SEMIOSCINIUM PLANUM n. sp.....	285
Portion of the non-celluliferous face of the type specimen, $\times 5$ . Helderberg formation, Keyser member, Hyndman, Penna.	



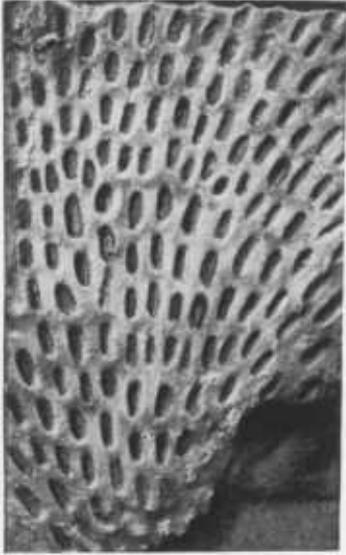
1



3



2

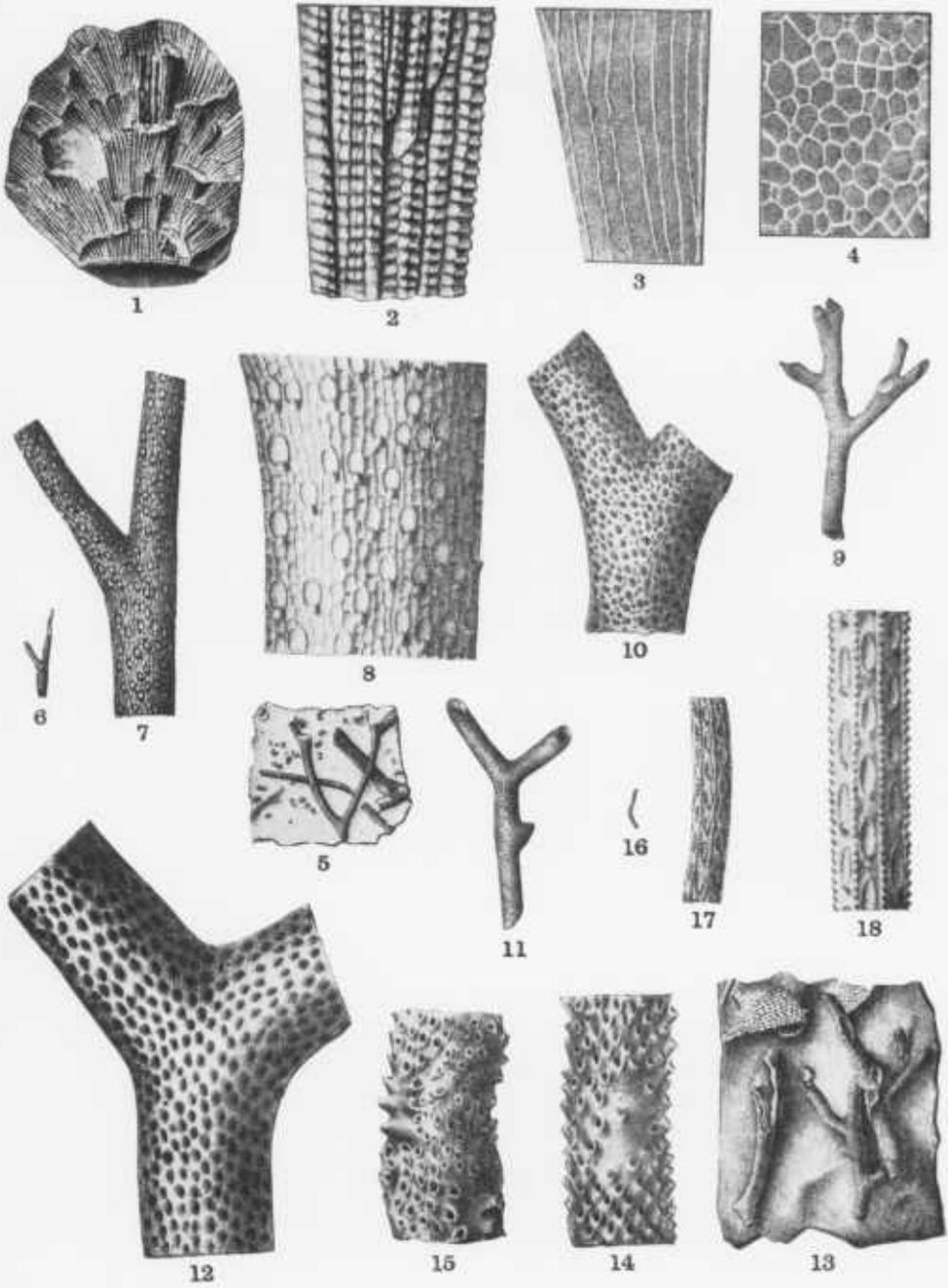


4

MOLLUSCOIDEA—BRYOZOA

PLATE L

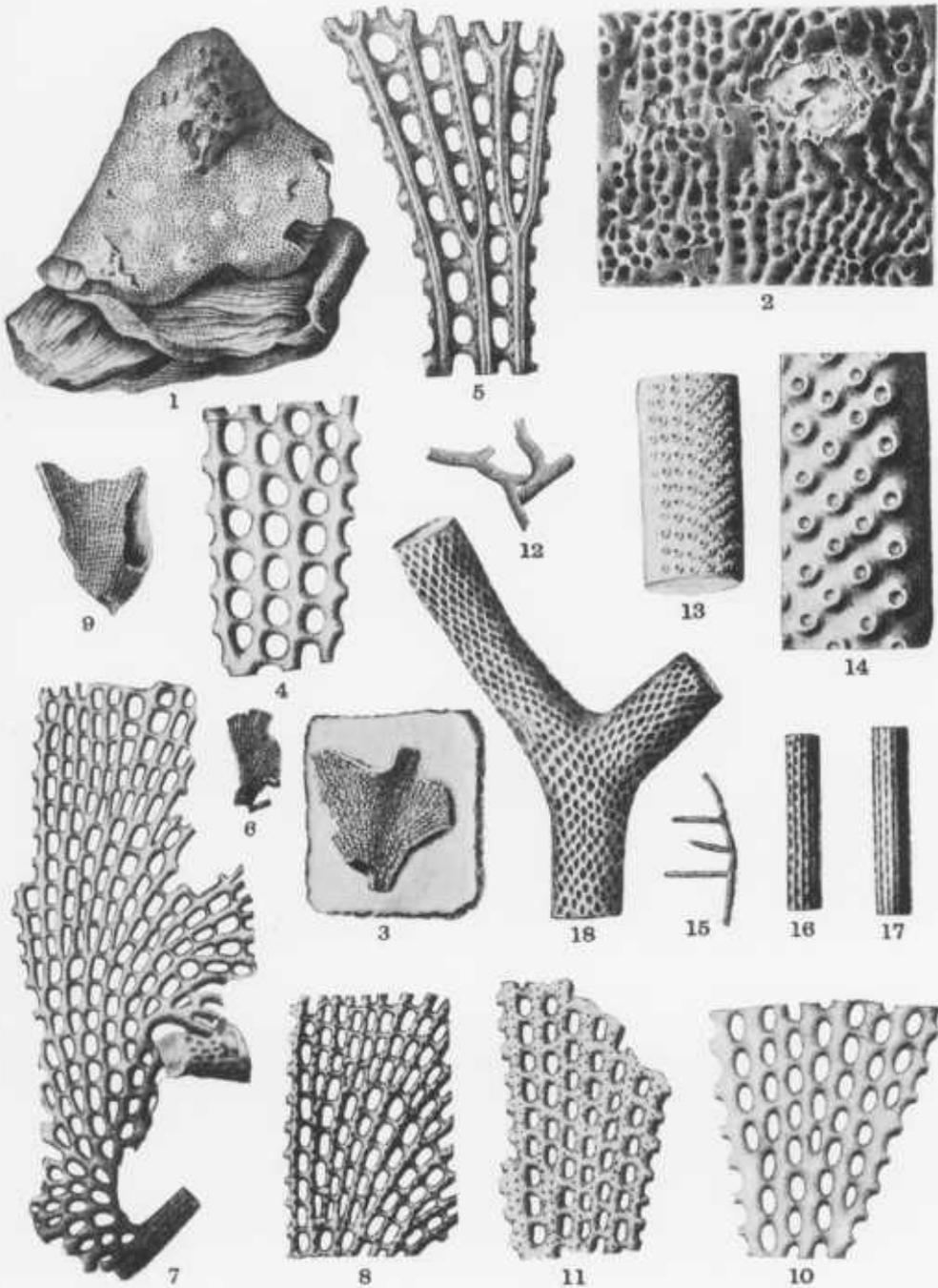
	PAGE
Figs. 1-4. <i>MONOTRYPA TABULATA</i> (Hall).....	278
1. Vertical fracture of a zoarium, natural size, showing corrugated zoecial walls.	
2. A portion of the same enlarged.	
3-4. Vertical and tangential sections, $\times 6$ . New Scotland formation, New York.	
Figs. 5-8. <i>CALLOTRYPA STRIATA</i> (Hall and Simpson).....	271
5. A fragment of limestone with small examples of this species, natural size.	
6, 7. A small fragment and a portion of the same enlarged.	
8. A further enlargement ( $\times 18$ ), showing the arrangement of the zoecia and mesopores and the prominent spine, at the posterior end of the zoecium. New Scotland formation, New York.	
Figs. 9, 10. <i>CALLOTRYPA MACROPORA</i> (Hall).....	271
A branching fragment and a portion of the same enlarged. New Scotland formation, New York.	
Figs. 11, 12. <i>ERIDOTRYPA CORTICOSA</i> (Hall).....	273
A fragment, natural size, and a portion of the same enlarged showing the thick walled zoecia. New Scotland formation, New York.	
Figs. 13-15. <i>CHILOTRYPA CONSTRICTA</i> (Hall).....	269
13. A small piece of limestone with fragments of this species.	
14, 15. Two fragments enlarged, the first showing the regular arrangement of the zoecia and the second showing several maculae. New Scotland formation, New York.	
Figs. 16-18. <i>ORTHOPORA OVATIPORA</i> (Hall).....	288
16, 17. A fragment, natural size, and an enlargement of the same.	
18. Surface of a fragment, $\times 18$ . New Scotland formation, New York.	



MOLLUSCOIDEA—BRYOZOA

PLATE LI

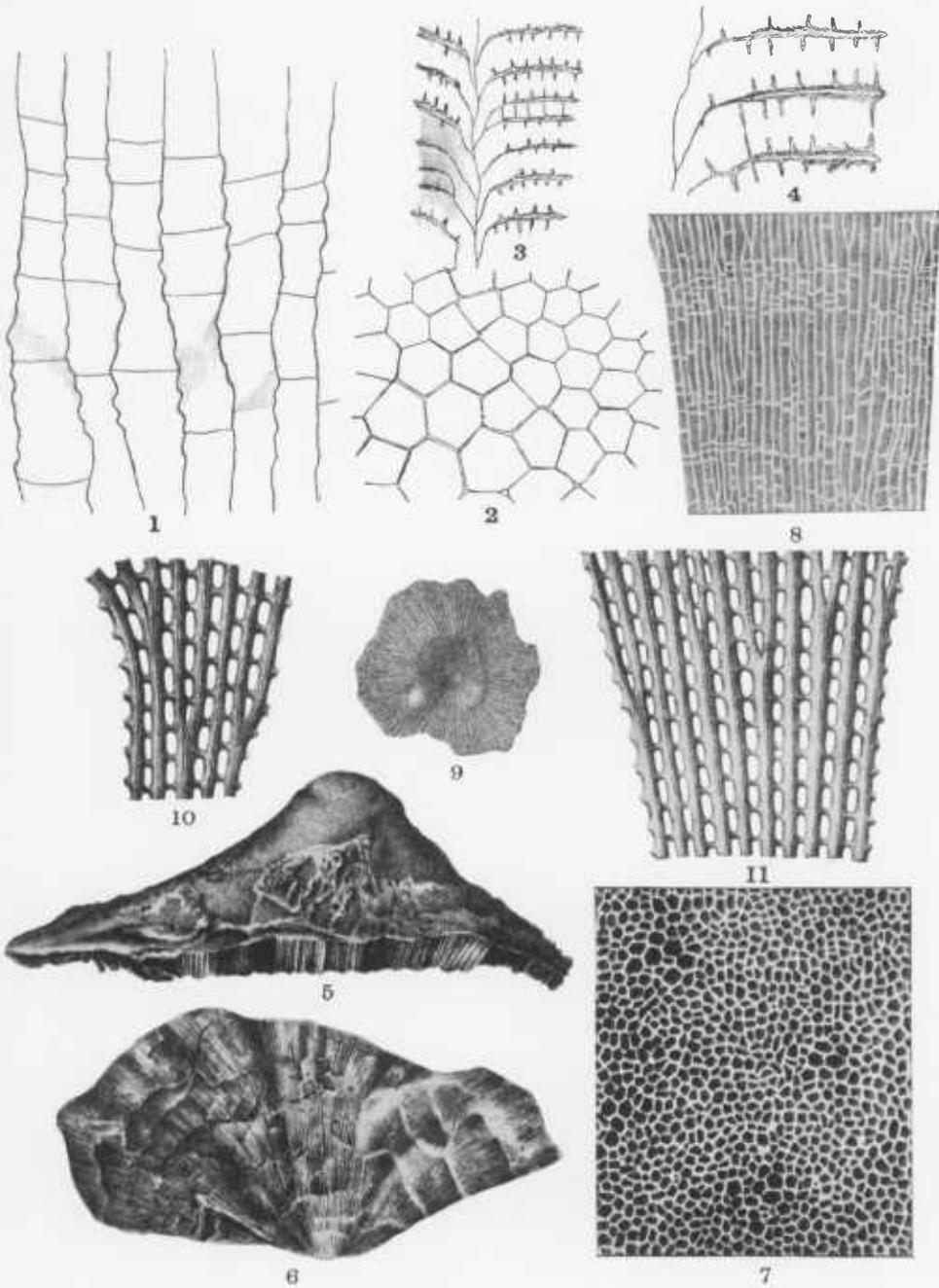
	PAGE
Figs. 1, 2. <i>FISTULIPORA MACULOSA</i> (Hall).....	262
1. A complete zoarium, natural size, showing the characteristic maculæ.	
2. Surface of a zoarium magnified. New Scotland formation, New York.	
Figs. 3-5. <i>SEMICOSCINIUM CORONIS</i> (Hall).....	285
3. A fragment, natural size.	
4. An enlargement of the non-celluliferous face.	
5. Celluliferous face enlarged, showing the characteristic, expanded carina. New Scotland formation, New York.	
Figs. 6-8. <i>FENESTELLA PHILIA</i> Hall.....	281
6, 7. A fragment showing the non-celluliferous face, $\times 1$ , and an enlargement of the same.	
8. Enlargement of the celluliferous side. New Scotland formation, New York.	
Figs. 9-11. <i>POLYPORA COMPACTA</i> (Hall).....	284
9. A fragment, natural size.	
10, 11. Enlargements of the non-celluliferous and celluliferous faces of this species. New Scotland formation, New York.	
Figs. 12-14. <i>STICTOPORA ? PAPILOSA</i> Hall.....	289
12. Fragments, natural size.	
13-14. Surface of specimen, $\times 6$ and $\times 18$ . New Scotland formation, New York.	
Figs. 15-17. <i>ORTHOPORA REGULARIS</i> (Hall).....	287
15. A specimen showing a rectangular mode of branching, $\times 1$ .	
16, 17. Surfaces of two specimens, $\times 6$ , showing variations in the thickness of the zoecial walls. New Scotland formation, New York.	
Fig. 18. <i>ORTHOPORA RHOMBIFERA</i> (Hall).....	286
Enlargement of a specimen showing arrangement and form of the zoecial apertures. New Scotland formation, New York.	



MOLLUSCOIDEA—BRYOZOA

PLATE LII

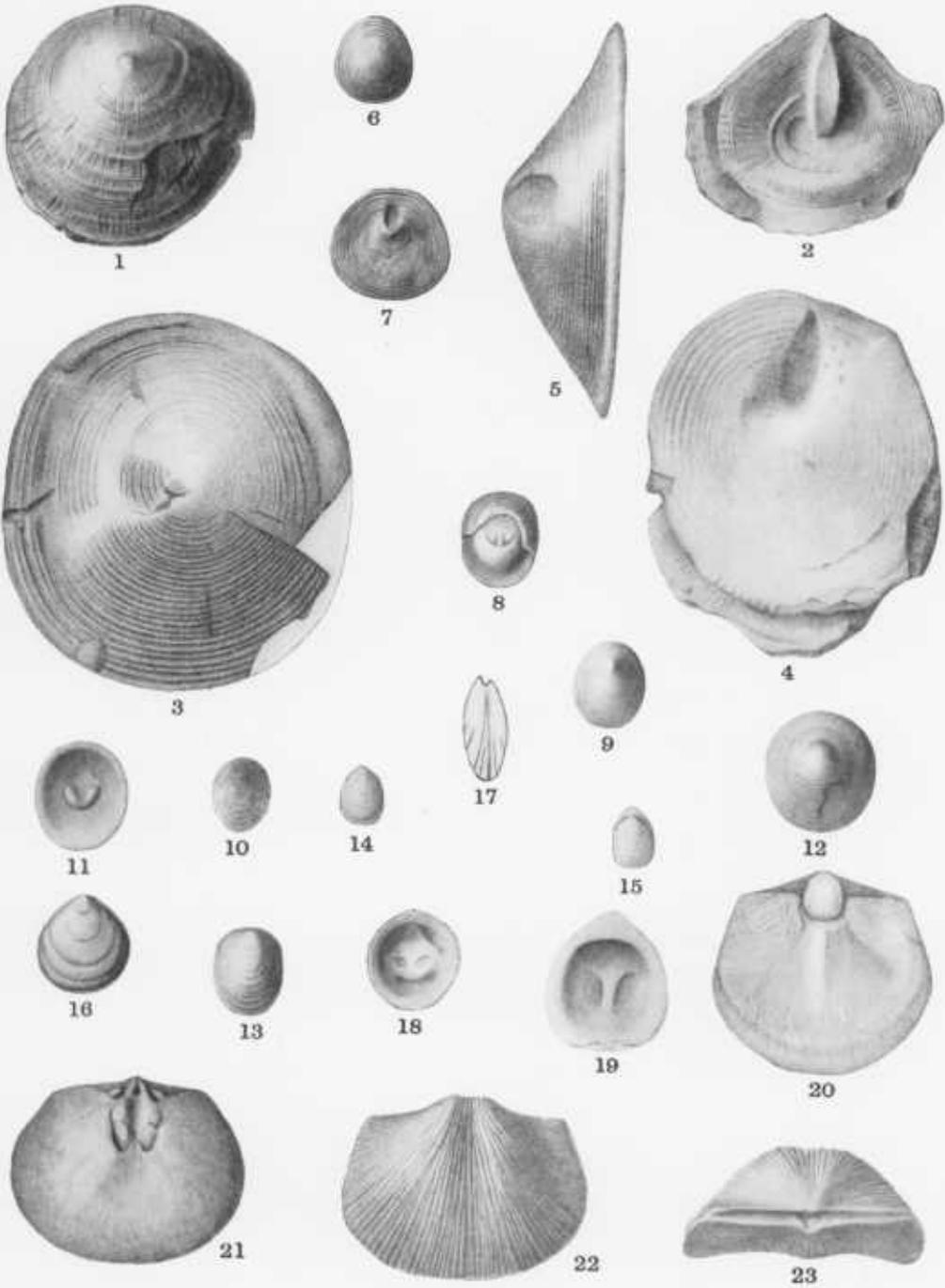
	PAGE
Figs. 1, 2. <i>CYPHOTRYPA CORRUGATA</i> (Weller).....	269
1. Vertical section, showing the characteristic crenulated walls and the distribution of diaphragms. × 20.	
2. Tangential section illustrating the range in size of the macular and intermacular zoëcia. × 20.	
Decker Ferry formation, New Jersey.	
Figs. 3, 4. <i>DIPLOSTENOPORA SILURIANA</i> (Weller).....	277
3. A vertical section illustrating the bifoliate method of growth and the characteristic perforated diaphragms. × 20.	
4. Several zoëcial tubes of the same section. × 35.	
Decker Ferry formation, New Jersey.	
Figs. 5-8. <i>MONOTRYPA SPHERICA</i> (Hall).....	278
5. Side view of a zoarium, natural size.	
6. A vertical fracture, natural size.	
7. An enlargement of the celluliferous surface.	
8. Vertical section illustrating the distribution of the diaphragms. × 4.	
New Scotland formation, New York.	
Figs. 9-11. <i>FENESTELLA ? IDALIA</i> Hall.....	281
9. A funnel-shaped frond, natural size.	
10. An enlargement of the non-celluliferous face of the same.	
11. An enlargement of another specimen with stouter branches.	
New Scotland formation, New York.	



MOLLUSCOIDEA—BRYOZOA

PLATE LIII

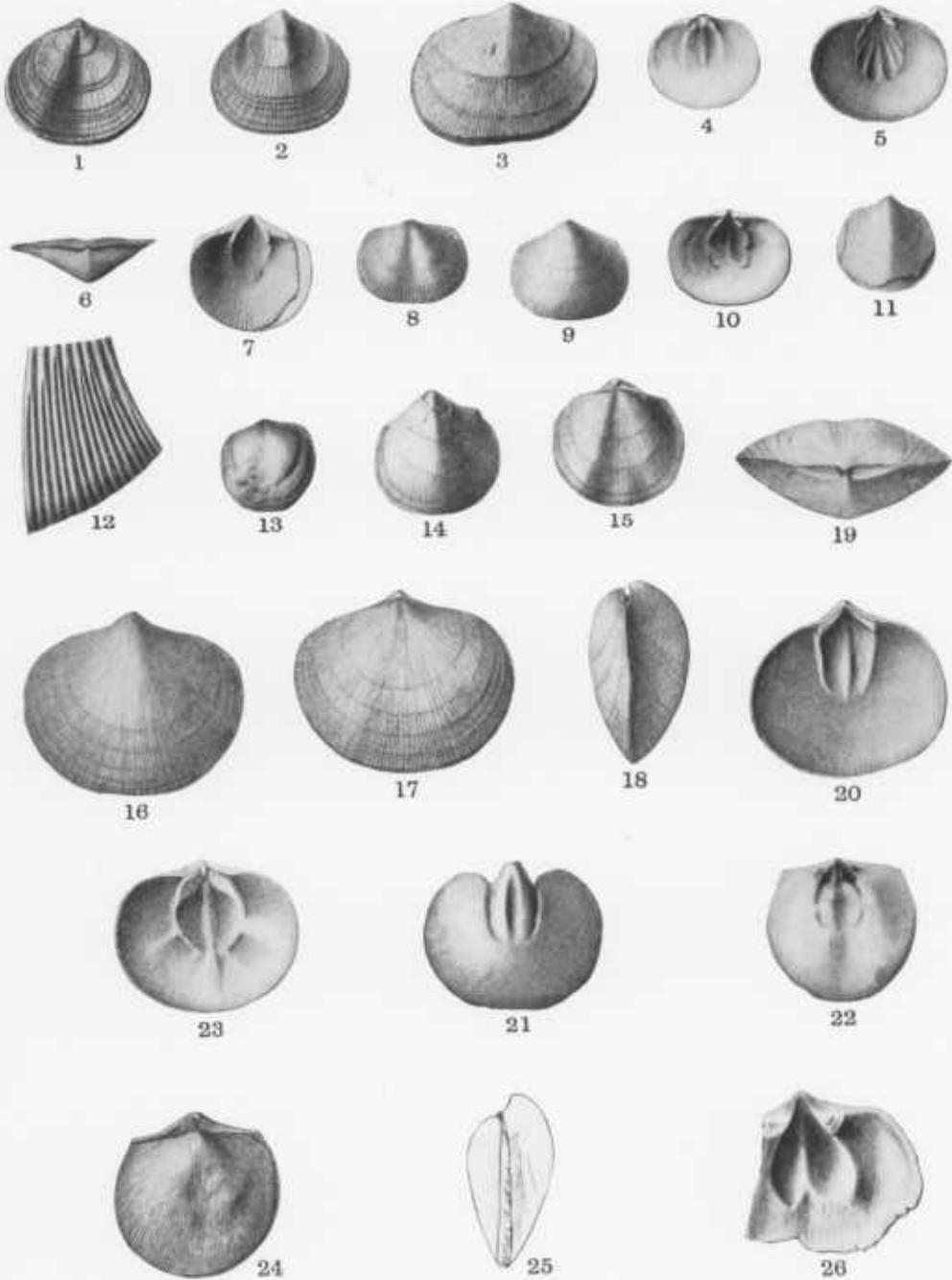
	PAGE
Figs. 1, 2. <i>ORBICULOIDEA RÆDERI</i> Schuchert n. sp.....	290
1. Exterior of dorsal valve.	
2. Exterior mold of ventral valve. Oriskany formation, Ridgely member, Cash Valley.	
Figs. 3-5. <i>ORBICULOIDEA AMPLA</i> (Hall).....	291
3. Cast from a mold of the dorsal valve.	
4. Side elevation of same.	
5. Partially exfoliated ventral valve. Oriskany formation, New York.	
Figs. 6, 7. <i>ORBICULOIDEA SCHUCHERTI</i> Swartz n. sp.....	292
6. Exterior of dorsal valve.	
7. Exterior of ventral valve. Helderberg formation, Keyser member, Dawson, W. Va.	
Figs. 8, 9. <i>PHOLIDOPS MULTILAMELLOSA</i> Schuchert n. sp.....	293
8. Exterior of ventral ? valve partially exfoliated, showing interior muscular scars. × 2.	
9. Exterior of dorsal valve. × 2. Oriskany formation, Shriver member, Cash Valley.	
Figs. 10-12. <i>PHOLIDOPS OVATA</i> Hall.....	294
10. Exterior of dorsal valve. × 3. New Scotland of New York.	
11. Interior of dorsal valve. × 5.	
12. Exterior of dorsal valve. × 5. Helderberg formation, Keyser member, ¾ mile southwest of Rawlings.	
Fig. 13. <i>PHOLIDOPS TUMIDA</i> Schuchert n. sp.....	294
Exterior of dorsal valve. × 3. Oriskany formation, Shriver member, Winchester road.	
Figs. 14-19. <i>LINGULAPHOLIS TERMINALIS</i> (Hall).....	296
14. Exterior of ventral valve.	
15. Exterior of dorsal valve.	
16. Exterior of dorsal ? valve of another specimen. × 2.	
17. Profile outline of same, showing both valves in position.	
18. Interior of ventral valve. × 2.	
19. Interior of ventral valve. × 3. Oriskany formation, Ridgely member, Cumberland. (Figs. 14, 15, 19, after Hall.)	
Figs. 20-23. <i>ORTHOSTROPHIA STROPHOMENOIDES</i> (Hall).....	297
20, 21. Internal casts of ventral and dorsal valves.	
22, 23. Dorsal and cardinal views. New Scotland formation, New York.	



MOLLUSCOIDEA—BRACHIOPODA

PLATE LIV

	PAGE
Figs. 1-6. <i>DALMANELLA PLANICONVEXA</i> (Hall).....	298
1, 2. Dorsal and ventral shells. $\times 1\frac{1}{4}$ . Helderberg formation, New Scotland member, 21st Bridge.	
3. Ventral valve. Helderberg formation, Becraft member, Cherry Run, W. Va.	
4. The interior of dorsal valve of a smaller individual.	
5. Interior of ventral valve.	
6. Cardinal view of a larger individual. New Scotland formation, New York.	
 Figs. 7-10. <i>DALMANELLA CLARKI</i> Maynard n. sp.....	 300
7. Interior of ventral valve. $\times 2\frac{1}{2}$ .	
8. Dorsal valve. $\times 2$ .	
9. Ventral valve. $\times 2$ .	
10. Interior of dorsal valve. $\times 2$ . Helderberg formation, Keyser member, Cash Valley.	
 Figs. 11-13. <i>DALMANELLA CONCINNA</i> (Hall).....	 301
11. Ventral valve.	
12. Surface ornamentation. $\times 7$ .	
13. Dorsal valve. Helderberg formation, Keyser member, Cumberland.	
 Figs. 14-23. <i>DALMANELLA PERELEGANS</i> (Hall).....	 299
14, 15. Ventral and dorsal valves. Helderberg formation, New Scot- land member, Corriganville.	
16-19. Ventral, dorsal, side, and cardinal views.	
20. Interior of ventral valve.	
21. Internal cast of ventral valve.	
22. Internal cast of dorsal valve.	
23. Interior of dorsal valve. New Scotland formation, New York.	
 Figs. 24-26. <i>DALMANELLA EMINENS</i> (Hall).....	 299
24. Dorsal view.	
25. Profile outline of same.	
26. Interior of ventral valve. Helderberg formation, New Scotland member, Corriganville.	



MOLLUSCOIDEA—BRACHIOPODA

PLATE LV

	PAGE
Figs. 1-8. RHIPIDOMELLA EMARGINATA (Hall).....	302
1-4. Illustrations of the form and character of this variety.	
5, 6. Interior of ventral and dorsal valves.	
7, 8. Cast of the ventral and dorsal valve.	
Helderberg formation, Keyser member, Cumberland. (After Hall.)	
Figs. 9-16. RHIPIDOMELLA OBLATA (Hall).....	303
9, 10. Ventral and dorsal valves.	
11. Profile of same.	
12. A small dorsal valve.	
13, 14. Interior of ventral and dorsal valves.	
15. Internal cast of the ventral valve, showing the muscular and vascular impressions.	
16. Cast of the dorsal valve, with impressions of the cardinal and brachial processes.	
New Scotland formation, New York.	
Figs. 17-19. RHIPIDOMELLA ASSIMILIS (Hall).....	304
17. Ventral valve.	
18. Dorsal view of a large shell.	
19. Interior of ventral valve.	
Helderberg formation, Becraft member, North Mountain, W. Va.	
Fig. 20. RHIPIDOMELLA MUSCULOSA (Hall).....	305
Cast of interior of dorsal valve. Oriskany formation, New York.	
Figs. 21, 22. RHIPIDOMELLA MUSCULOSA VAR. ARCTISINUATA Schuchert n. var. ....	306
21. Dorsal view.	
22. Ventral view of same.	
Oriskany formation, Ridgely member, Cumberland.	
Fig. 23. RHIPIDOMELLA MARYLANDICA Schuchert n. sp.....	306
Interior cast of ventral valve. Oriskany formation, Ridgely member, Williams road, near Cumberland.	



1



2



3



4



5



6



7



8



9



10



15



13



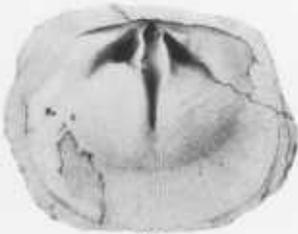
14



12



11



16



17



18



19



20



21



22



23

PLATE LVI

	PAGE
Figs. 1-4. RHIPIDOMELLA MUSCULOSA (Hall).....	305
1. Exterior of dorsal shell.	
2. Lateral view of the conjoined valves.	
3. Interior of dorsal valve.	
4. Interior of ventral valve.	
Oriskany formation, Ridgely member, Cumberland. (After Hall.)	
Figs. 5-8. SCHIZOPHORIA MULTISTRIATA (Hall).....	307
5, 6. Dorsal and side views of shells.	
7, 8. Internal cast of ventral and dorsal valves.	
New Scotland formation, New York.	
Figs. 9-12. SCHIZOPHORIA ORISKANIA Schuchert n. sp.....	307
9, 10. Dorsal and side views. The discontinuous striæ in the drawing are due to the pseudomorphous nature of the specimen.	
11, 12. Internal casts of ventral and dorsal valves.	
Oriskany formation, Ridgely member, Cumberland.	
Figs. 13-17. LEPTÆNA RHOMBOIDALIS (Wilckens).....	308
13, 15. Ventral and dorsal views.	
14. Ventral valve.	
16. Interior of dorsal valve, showing some variety of character.	
17. Internal cast of ventral valve.	
New Scotland formation, New York.	
Fig. 18. LEPTÆNA RHOMBOIDALIS VAR. VENTRICOSA (Hall).....	309
Interior view of dorsal valve. Oriskany formation, New York.	



1



2



3



4



5



6



7



8



9



10



11



13



12



16



14



15



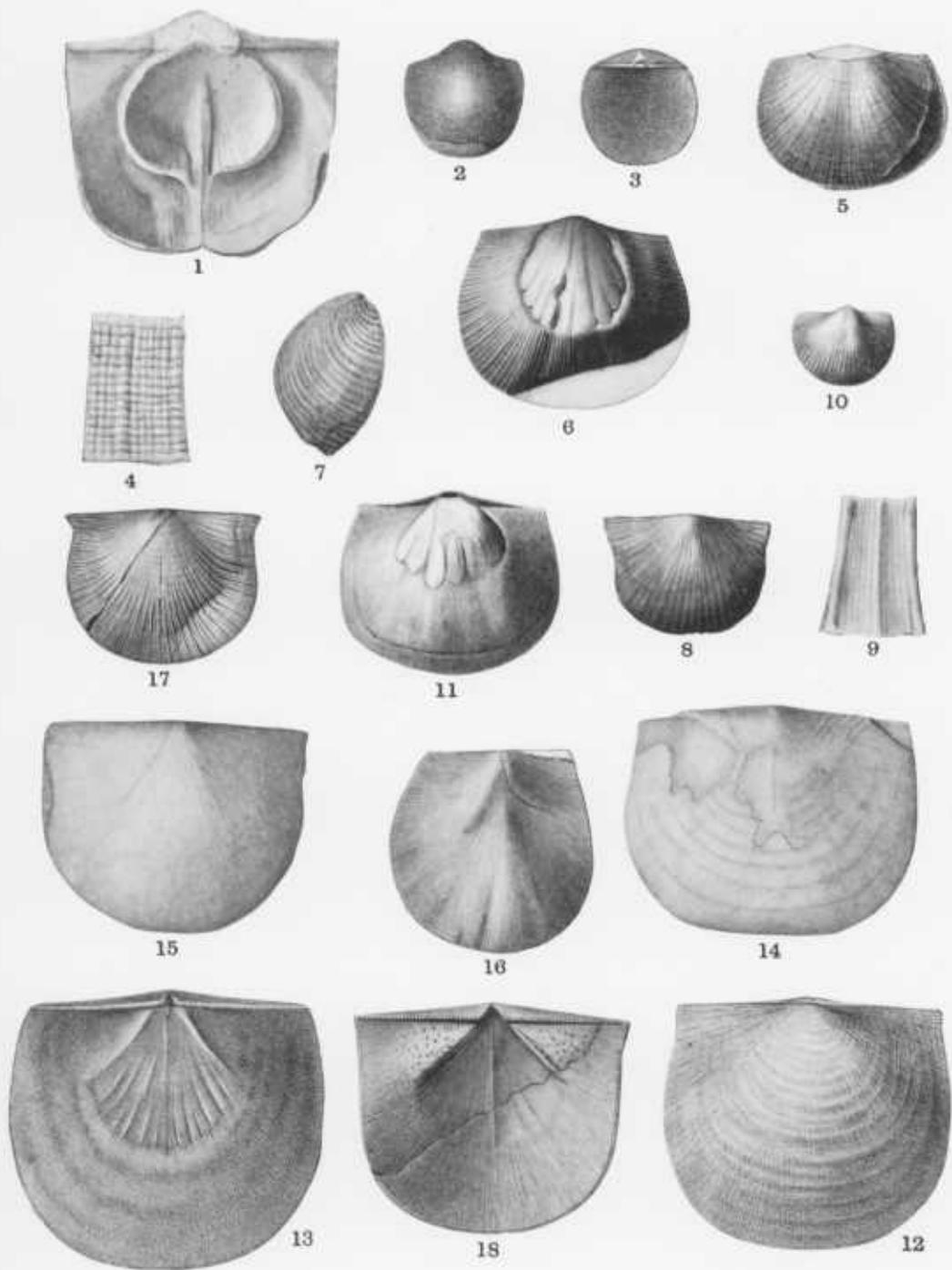
17



18

PLATE LVII

	PAGE
Fig. 1. <i>LEPTÆNA RHOMBOIDALIS</i> VAR. <i>VENTRICOSA</i> (Hall).....	309
Interior of ventral valve. Oriskany formation, Ridgely member, Cumberland. (After Hall.)	
Figs. 2-6. <i>LEPTÆNISCA CONCAVA</i> (Hall).....	310
2. Ventral exterior.	
3. Dorsal aspect.	
4. Enlargement of the surface, showing the finer longitudinal striæ. New Scotland formation, New York.	
5. Exterior of ventral valve. × 2. Helderberg formation, New Scotland member, Devil's Back- bone.	
Fig. 6. <i>STROPHEODONTA COEYMANENSIS</i> Swartz n. sp.....	313
Ventral valve showing exterior save in center where muscular scars of interior are seen. Helderberg formation, Coeymans member, Devil's Backbone.	
Figs. 7-10. <i>STROPHEODONTA ARATA</i> (Hall).....	311
7. Side view.	
8. Ventral valve more or less exfoliated.	
9. The surface showing ridges and striæ. New Scotland formation, New York.	
10. Small ventral valve. Helderberg formation, Coeymans member, Devil's Backbone.	
Fig. 11. <i>STROPHEODONTA DEMISSA</i> (Conrad).....	313
Internal cast of ventral valve. Oriskany formation, Ridgely member, Pendleton County, W. Va.	
Figs. 12, 13. <i>STROPHEODONTA (LEPTOSTROPHIA) BECKII</i> (Hall).....	314
12. Ventral exterior.	
13. Ventral interior. New Scotland formation, New York.	
Figs. 14-16. <i>STROPHEODONTA (LEPTOSTROPHIA) PLANULATA</i> (Hall).....	315
14. An individual showing faint concentric undulations.	
15. Ventral valve partially exfoliated. Coeymans formation, New York.	
16. Ventral valve differing from usual form. Helderberg formation, Becraft member, Licking Creek, Penna.	
Figs. 17, 18. <i>STROPHEODONTA (LEPTOSTROPHIA) BIPARTITA</i> (Hall).....	316
17. Exterior of ventral valve. Pinto.	
18. Interior of ventral valve. Devil's Backbone. Helderberg formation, Keyser member.	



MOLLUSCOIDEA—BRACHIOPODA

PLATE LVIII

	PAGE
Fig. 1. STROPHEODONTA (LEPTOSTROPHIA) ARCTIMUSCULA Schuchert n. sp..	317
Interior of ventral valve. Oriskany formation, Shriver member, 21st Bridge.	
Figs. 2-5. STROPHEODONTA (LEPTOSTROPHIA) MAGNIFICA (Hall).....	318
2. Exterior of ventral valve.	
3. View of dorsal valve.	
4. Ventral interior.	
5. Interior of dorsal valve.	
Oriskany formation, Ridgely member, Cumberland. (Figs. 3-5 after Hall.)	
Figs. 6-8. STROPHEODONTA (LEPTOSTROPHIA) MAGNIVENTRA (Hall).....	319
6. Internal cast of ventral valve. Oriskany formation, New York.	
7. Interior of dorsal valve.	
8. Exterior of ventral valve.	
Oriskany formation, Ridgely member, Cumberland. (Fig. 6 after Hall.)	

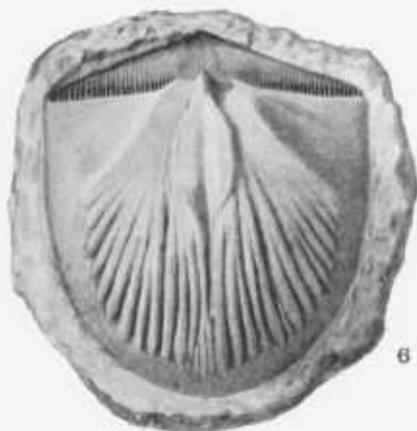
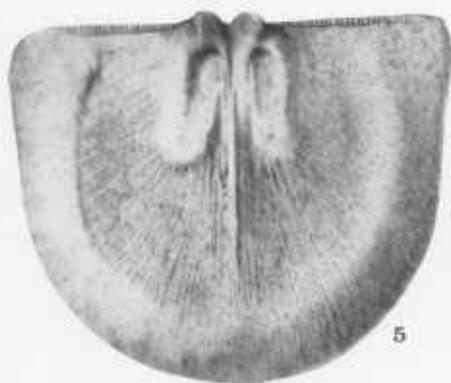
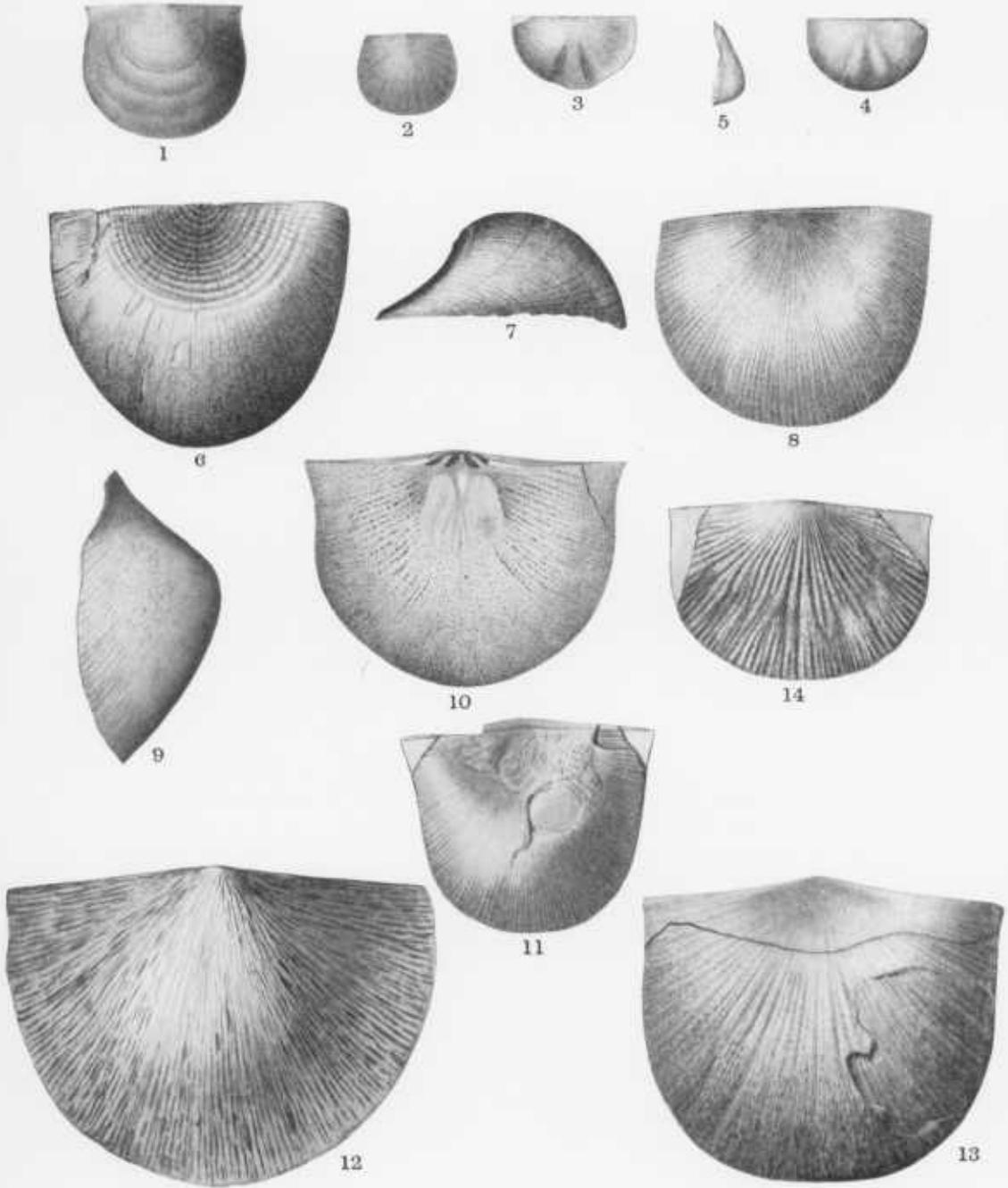


PLATE LIX

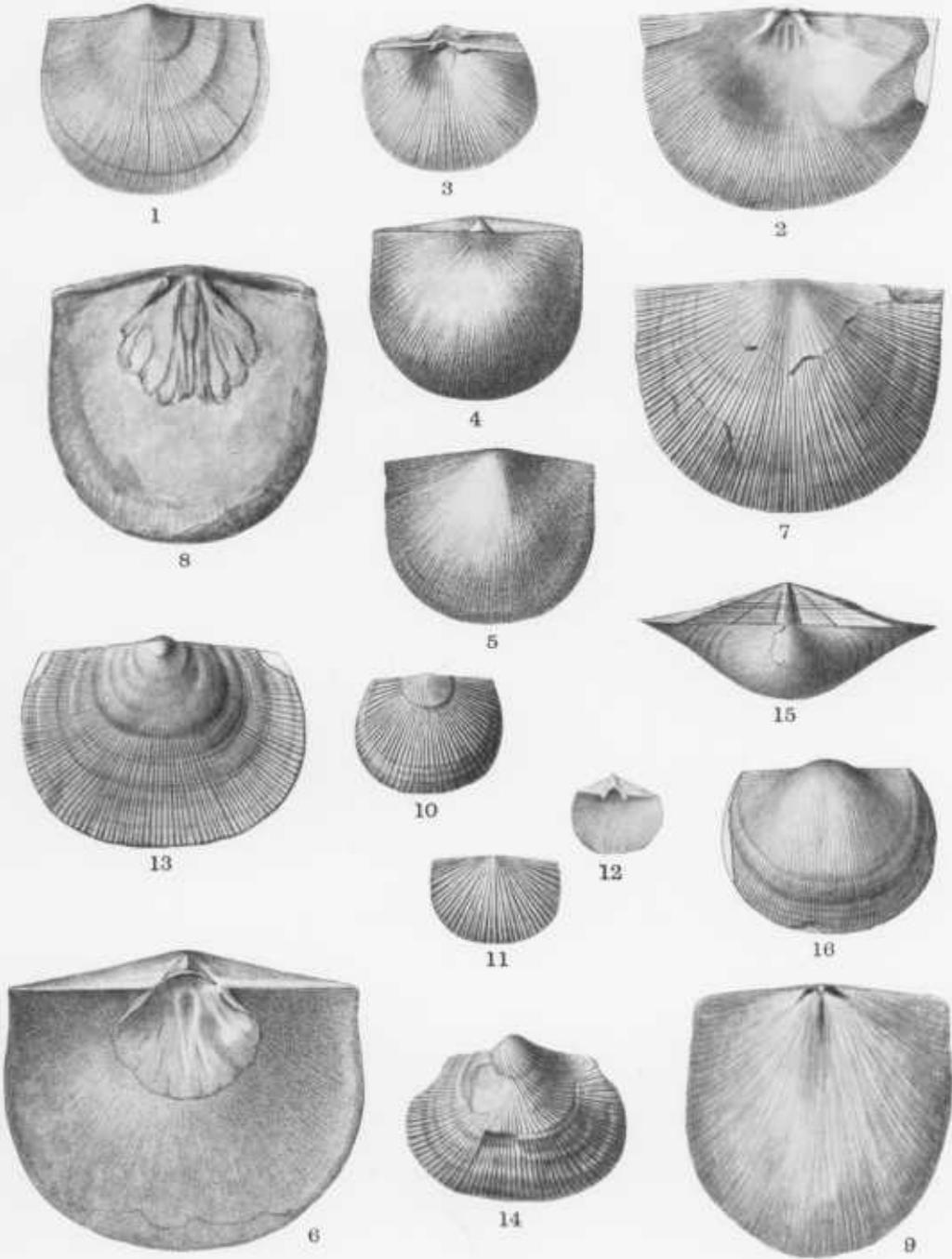
	PAGE
Figs. 1, 2. STROPHEODONTA VARISTRIATA Conrad.....	312
1. Ventral valve. Striæ are nearly equal or alternating in size.	
2. Individual with alternating striæ. Manlius formation, New York.	
Figs. 3-5. STROPHONELLA GENICULATA (Hall).....	321
Ventral, dorsal, and side views of a small individual. Helderberg formation, Keyser member, Cumberland. (After Hall.)	
Figs. 6, 7. STROPHONELLA LEAVENWORTHIANA (Hall).....	322
Dorsal and side views. New Scotland formation, New York.	
Figs. 8-10. STROPHONELLA PUNCTULIFERA (Hall).....	323
8. Dorsal valve.	
9. Side view of the dorsal valve.	
10. Interior of a more gibbous dorsal valve. New Scotland formation, New York.	
Fig. 11. STROPHONELLA KEYSERENSIS Swartz n. sp.....	324
Interior of dorsal valve. Helderberg formation, Keyser member, Tonoloway.	
Fig. 12. STROPHONELLA HEADLEYANA (Hall).....	325
Exterior of a ventral valve, showing the peculiar interrupted striation. New Scotland formation, New York.	
Figs. 13, 14. STROPHONELLA UNDAPLICATA Swartz n. sp.....	326
13. Dorsal valve.	
14. Small ventral valve. Helderberg formation, New Scotland member, Dawson, W. Va.	



MOLLUSCOIDEA—BRACHIOPODA

PLATE LX

	PAGE
Figs. 1-3. <i>SCHUCHERTELLA PROLIFICA</i> Schuchert n. sp. ....	327
1. Ventral valve.	
2. Interior of dorsal valve.	
3. Two small overlapping ventral interiors.	
Helderberg formation, Keyser member, Keyser, W. Va.	
Figs. 4-9. <i>SCHUCHERTELLA WOOLWORTHANA</i> (Hall) .....	328
4. Dorsal view.	
5. Ventral valve.	
6. Interior of a large ventral valve.	
New Scotland formation, New York.	
7. Dorsal valve. Helderberg formation. New Scotland member,	
Cedar Cliff, W. Va.	
8, 9. Internal cast of ventral and dorsal valves. New Scotland forma-	
tion, New York.	
Figs. 10-12. <i>SCHUCHERTELLA BECRAFTENSIS</i> (Clarke) .....	329
10, 11. Two dorsal valves.	
12. Interior of ventral valve.	
Oriskany formation, New York.	
Figs. 13-16. <i>SCHUCHERTELLA DECKERENSIS</i> (Weller) .....	329
13, 14. Ventral valves.	
15. Cardinal view.	
16. Dorsal valve.	
Helderberg formation, Keyser member, Keyser, W. Va.	



MOLLUSCOIDEA—BRACHIOPODA

PLATE LXI

	PAGE
Figs. 1, 2. <i>SCHUCHERTELLA DEFORMIS</i> (Hall).....	331
1. View of the dorsal valve and area of the ventral valve.	
2. Ventral valve of the same specimen, showing the contracted and distorted beak.	
Helderberg formation, Keyser member, Cumberland. (After Hall.)	
Figs. 3, 4. <i>SCHUCHERTELLA SINUATA</i> (Hall and Clarke).....	331
Dorsal and cardinal views. Helderberg formation, Keyser member, Cumberland. (After Hall and Clarke.)	
Figs. 5-9. <i>SCHUCHERTELLA MARYLANDICA</i> Maynard n. sp.....	332
5, 6, 7. Ventral, dorsal, and cardinal views of type specimen.	
8, 9. Partially exfoliated dorsal valves, Keyser, W. Va.	
Helderberg formation, Keyser member, Cumberland.	
Figs. 10-13. <i>HIPPARIONYX PROXIMUS</i> Vanuxem.....	333
10, 11. Dorsal and ventral valves.	
12, 13. Interior ventral and dorsal valves.	
Oriskany formation, Ridgely member, Cumberland. (After Hall.)	
Fig. 14. <i>CHONETES ROWEI</i> Schuchert n. sp.....	336
Ventral valve. Oriskany formation, Ridgely member, Miller's Spring, near Cumberland.	
Fig. 15. <i>CHONETES HUDSONICUS</i> Clarke.....	337
Ventral valve. The umbo is cracked. Oriskany formation, Ridgely member, Winchester road.	
Fig. 16. <i>CHONETES SUBACUTIRADIATUS</i> Schuchert n. sp.....	335
Ventral valve. Helderberg formation, New Scotland member, Miller's Spring, near Cumberland.	
Figs. 17-19. <i>CHONETES JERSEYENSIS</i> Weller.....	338
17. Ventral valve of a young individual, Tonoloway.	
18, 19. Ventral and dorsal valves, Flintstone.	
Helderberg formation, Keyser member.	
Fig. 20. <i>CHONETES JERSEYENSIS</i> VAR. <i>SPINOSUS</i> Maynard n. var.....	339
Ventral valve. Helderberg formation, Keyser member, Hancock.	
Fig. 21. <i>ANOPLIA HELDERBERGLÆ</i> Schuchert n. sp.....	340
Ventral valve. $\times 3$ . The median furrow is due to a fracture. The shell is uniformly convex. Helderberg formation, New Scotland member, 21st Bridge.	
Figs. 22-24. <i>ANOPLIA NUCLEATA</i> (Hall).....	340
22. Exterior of dorsal valve. $\times 3$ .	
23. Interior of dorsal valve. $\times 2$ .	
24. Cardinal view of the internal cast of the ventral valve.	
Oriskany formation, New York.	



1



3



2



4



8



5



7



6



9



10



11



12



14



15



21



13



16



17



23



22



20



18



19



24

PLATE LXII

	PAGE
Figs. 1, 2. <i>CHONOSTROPHIA COMPLANATA</i> (Hall).....	341
1. Exterior of ventral valve.	
2. Internal cast of ventral valve.	
Oriskany formation, New York.	
Fig. 3. <i>CHONOSTROPHIA HELDERBERGLÆ</i> Hall and Clarke.....	342
Ventral valve. Helderberg formation, New Scotland member, Dawson.	
Figs. 4-7. <i>GYPIDULA (SIEBERELLA) COEYMANENSIS</i> Schuchert n. name.....	342
4. Interior of ventral valve.	
5-7. Dorsal, anterior, and side views.	
8. Dorsal view of large individual.	
Coeymans formation, New York.	
Figs. 9-11. <i>GYPIDULA (SIEBERELLA) COEYMANENSIS</i> VAR. <i>PROGNOSTICA</i> Schuchert n. var.....	344
9, 10. Ventral and side views of unusually large individual.	
11. Ventral view of individual of usual size.	
Helderberg formation, Keyser member, Keyser, W. Va.	
Figs. 12-18. <i>GYPIDULA (SIEBERELLA) COEYMANENSIS</i> VAR. <i>CORRIGANENSIS</i> Maynard n. var.....	345
12-15. Anterior, side, dorsal, and ventral views of a large individual.	
Cumberland.	
16-18. Dorsal, ventral, and side views of type. Devil's Backbone.	
19. Dorsal view. Keyser, W. Va.	
Helderberg formation, Keyser member.	
Figs. 20-22. <i>GYPIDULA SUBGLOBOSA</i> Maynard n. sp.....	346
Ventral, side, and dorsal views. Helderberg formation, Keyser member, Pinto.	
Figs. 23, 24. <i>RHYNCHOTRETA CUMBERLANDIA</i> Rowe n. sp.....	347
Dorsal and side view of a large specimen. Oriskany formation, Ridgely member, Cumberland.	
Figs. 25-29. <i>STENOCHISMA FORMOSA</i> Hall.....	349
25, 26. Dorsal and ventral views of a large individual.	
Becraft formation, New York.	
27-28. Side and ventral view of smaller individual.	
29. Dorsal view of young specimen.	
New Scotland formation, New York.	



1



2



3



4



5



6



8



7



9



10



11



12



13



14



15



16



17



18



19



20



21



22



23



24



25



26



27



28



29

PLATE LXIII

	PAGE
Figs. 1-4. <i>STENOCHISMA DECKERENSIS</i> (Weller).....	349
1-3. Ventral, side, and dorsal views.	
4. Dorsal view of a smaller specimen.	
Helderberg formation, Keyser member, Keyser, W. Va.	
Figs. 5, 6. <i>CAMAROTÆCHIA ? ALTIPLICATA</i> (Hall).....	351
5. View of ventral valve.	
6. Side view of same.	
New Scotland formation, New York.	
Figs. 7, 8. <i>CAMAROTÆCHIA ORISKANIA</i> Rowe n. sp.....	351
Dorsal and side views of shell. Oriskany formation, Ridgely member,	
Cumberland.	
Figs. 9, 10. <i>CAMAROTÆCHIA ? LAMELLATA</i> (Hall).....	352
Dorsal and ventral views of shells. Cobleskill formation, New York.	
Figs. 11-14. <i>CAMAROTÆCHIA LITCHFIELDENSIS</i> Schuchert.....	353
Anterior, side, ventral, and dorsal views. Helderberg formation,	
Keyser member, Cookerly.	
Figs. 15, 16. <i>CAMAROTÆCHIA GIGANTEA</i> Maynard n. sp.....	354
Dorsal and ventral views. Helderberg formation, Keyser member,	
Devil's Backbone.	
Figs. 17-19. <i>CAMAROTÆCHIA (PLETHORHYNCHIA) CAMPBELLANA</i> (Hall)....	354
Ventral, anterior, and side views. New Scotland formation, New York.	
Figs. 20, 21. <i>CAMAROTÆCHIA (PLETHORHYNCHIA) PRÆSPECIOSA</i> Schuchert	
n. sp. ....	355
20. View of a dorsal valve.	
21. Side view of shell.	
Helderberg formation, Becraft member, near Covington, Va.	
Figs. 22-27. <i>CAMAROTÆCHIA (PLETHORHYNCHIA) SPECIOSA</i> (Hall).....	356
22, 23. Dorsal and side views of a medium sized specimen.	
24, 25. Dorsal and side views of a large example.	
26, 27. Interior of ventral and dorsal valves.	
Oriskany formation, Ridgely member, Cumberland. (After	
Hall.)	

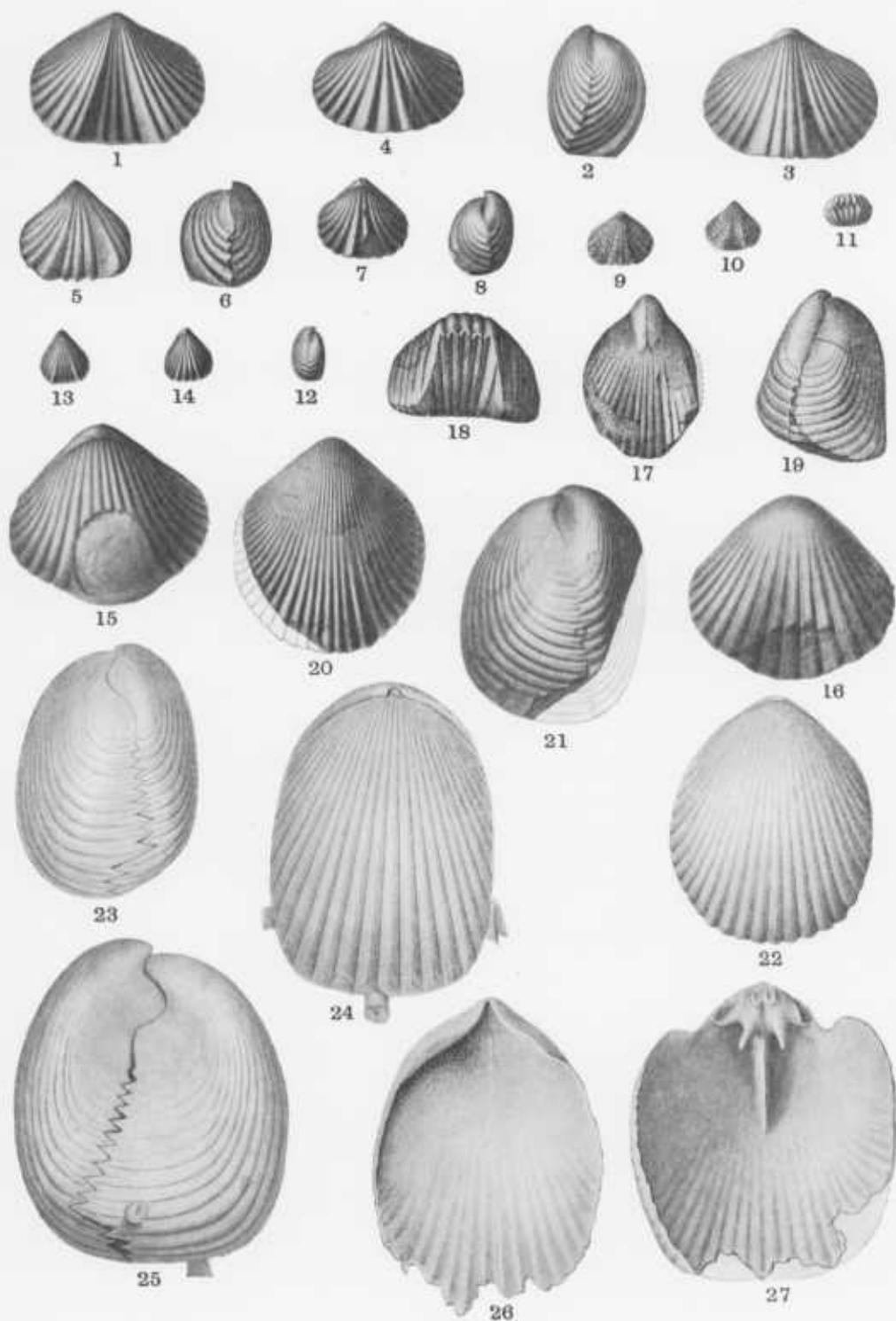
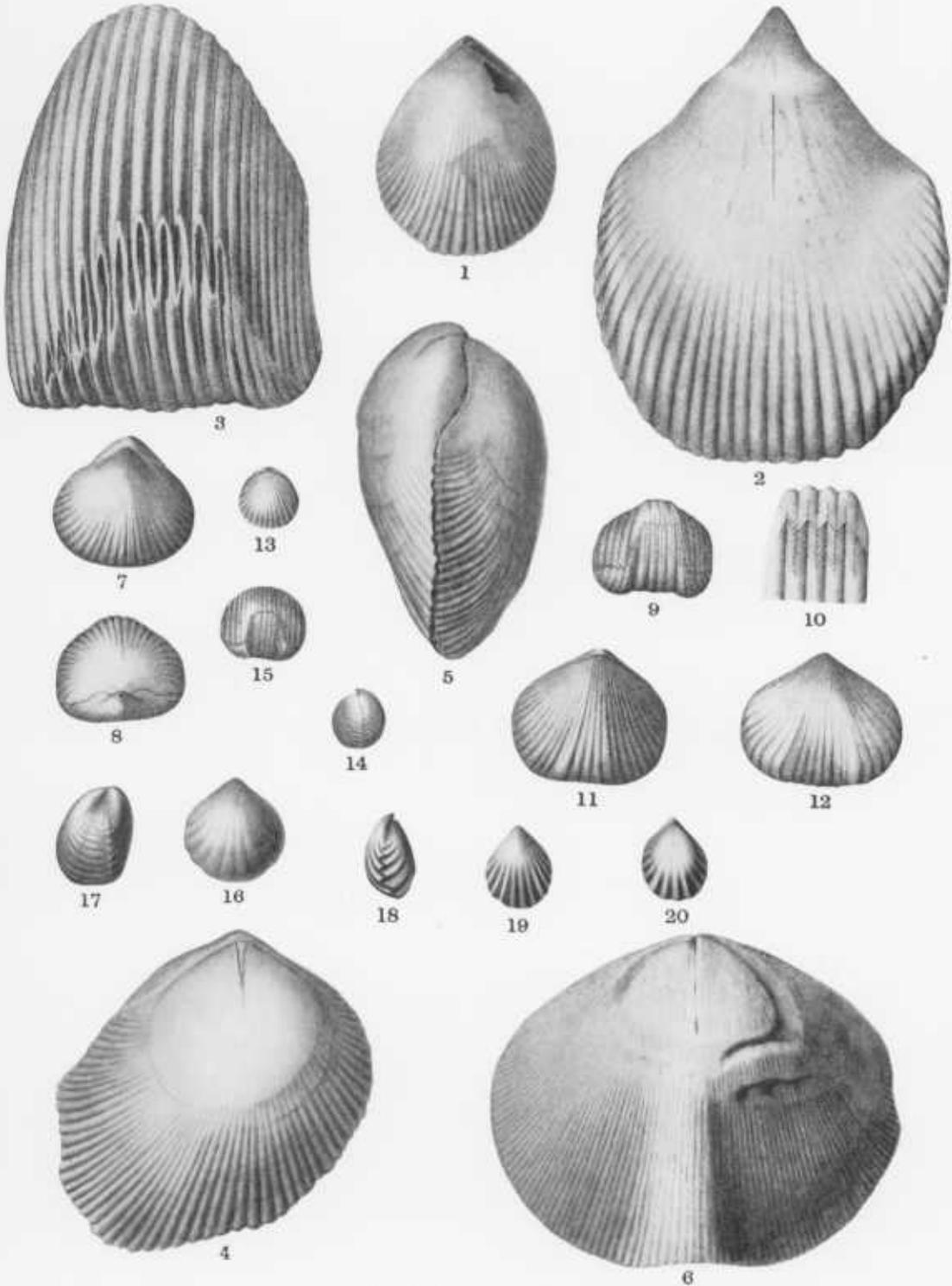


PLATE LXIV

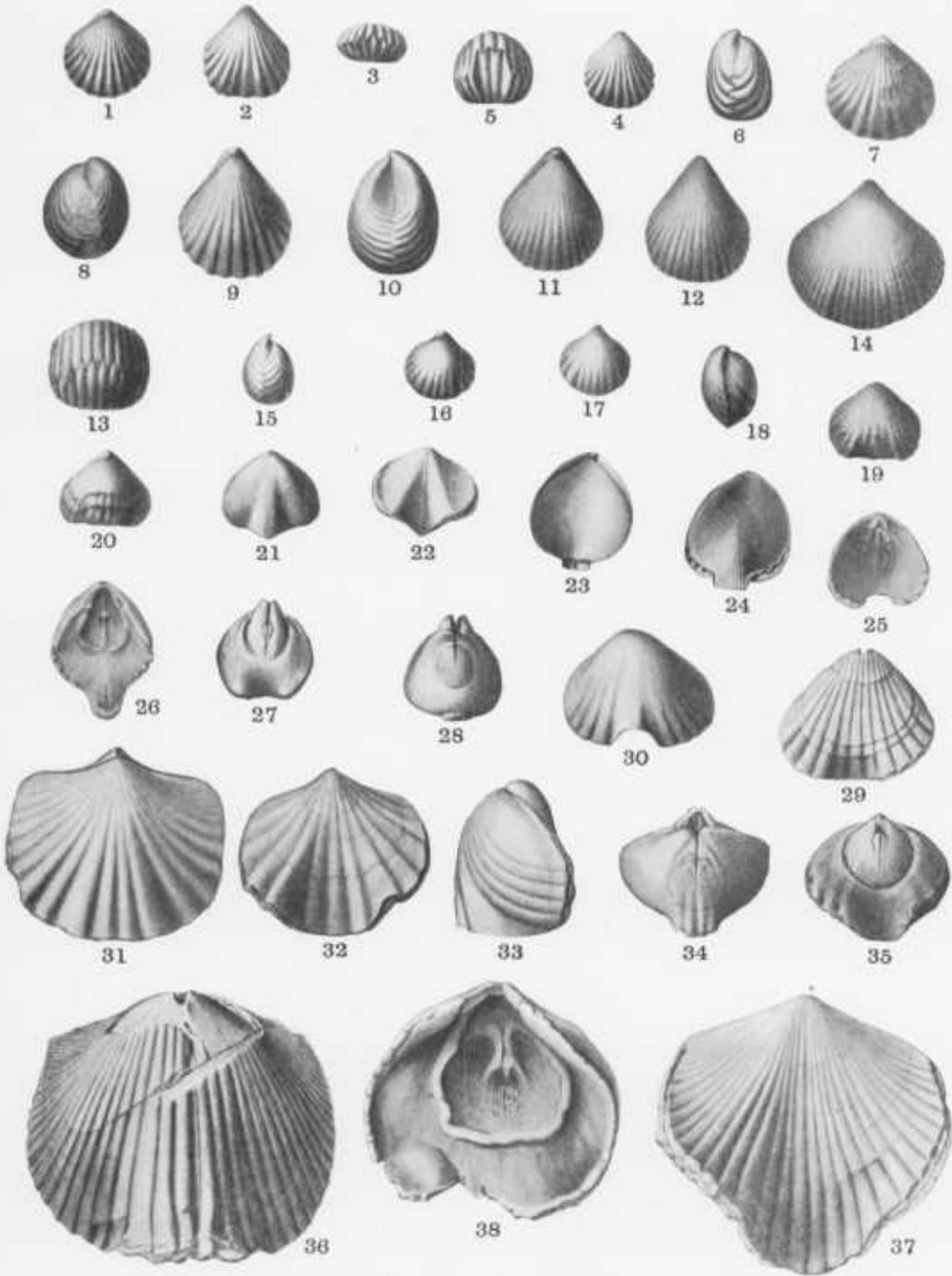
	PAGE
Fig. 1. CAMAROTECCHIA (PLETHORHYNCHA) SPECIOSA VAR. RAMSAYI (Hall). Dorsal view of the type specimen. Oriskany formation, Ridgely member, Cumberland. (After Hall.)	358
Figs. 2, 3. CAMAROTECCHIA (PLETHORHYNCHA) BARRANDII (Hall).....	359
2. Internal cast of ventral valve.	
3. Anterior view of a very gibbous specimen. Oriskany formation, New York.	
Figs. 4, 5. CAMAROTECCHIA (PLETHORHYNCHA) BARRANDII VAR. FITCHANA (Hall) .....	359
Dorsal and side views of internal cast. Oriskany formation, New York.	
Fig. 6. CAMAROTECCHIA (PLETHORHYNCHA) PLEIOPLEURA (Conrad).....	360
Dorsal valve. The drawing is much restored on the left. Oriskany formation, Ridgely member, Cumberland.	
Figs. 7-10. UNCINULUS VELLICATUS (Hall).....	362
7-9. Dorsal, cardinal, and anterior views.	
10. Plications of fold and sinus enlarged to show their linear median furrows and zigzag lines of growth. New Scotland formation, New York.	
Figs. 11, 12. UNCINULUS ABRUPTUS (Hall).....	363
Dorsal and ventral views. New Scotland formation, New York.	
Figs. 13-15. UNCINULUS GLOBULUS Schuchert.....	364
13, 14. Dorsal and side views.	
15. Anterior view of a larger specimen. New Scotland formation, New York.	
Figs. 16, 17. UNCINULUS NUCLEOLATUS (Hall).....	365
Ventral and side views. Helderberg formation, Keyser member, Keyser, W. Va.	
Figs. 18-20. UNCINULUS NUCLEOLATUS VAR. ANGULATUS Maynard n. var....	366
Side, ventral, and dorsal views of type specimen. Helderberg formation, Keyser member, Cumberland.	



MOLLUSCOIDEA—BRACHIOPODA

PLATE LXV

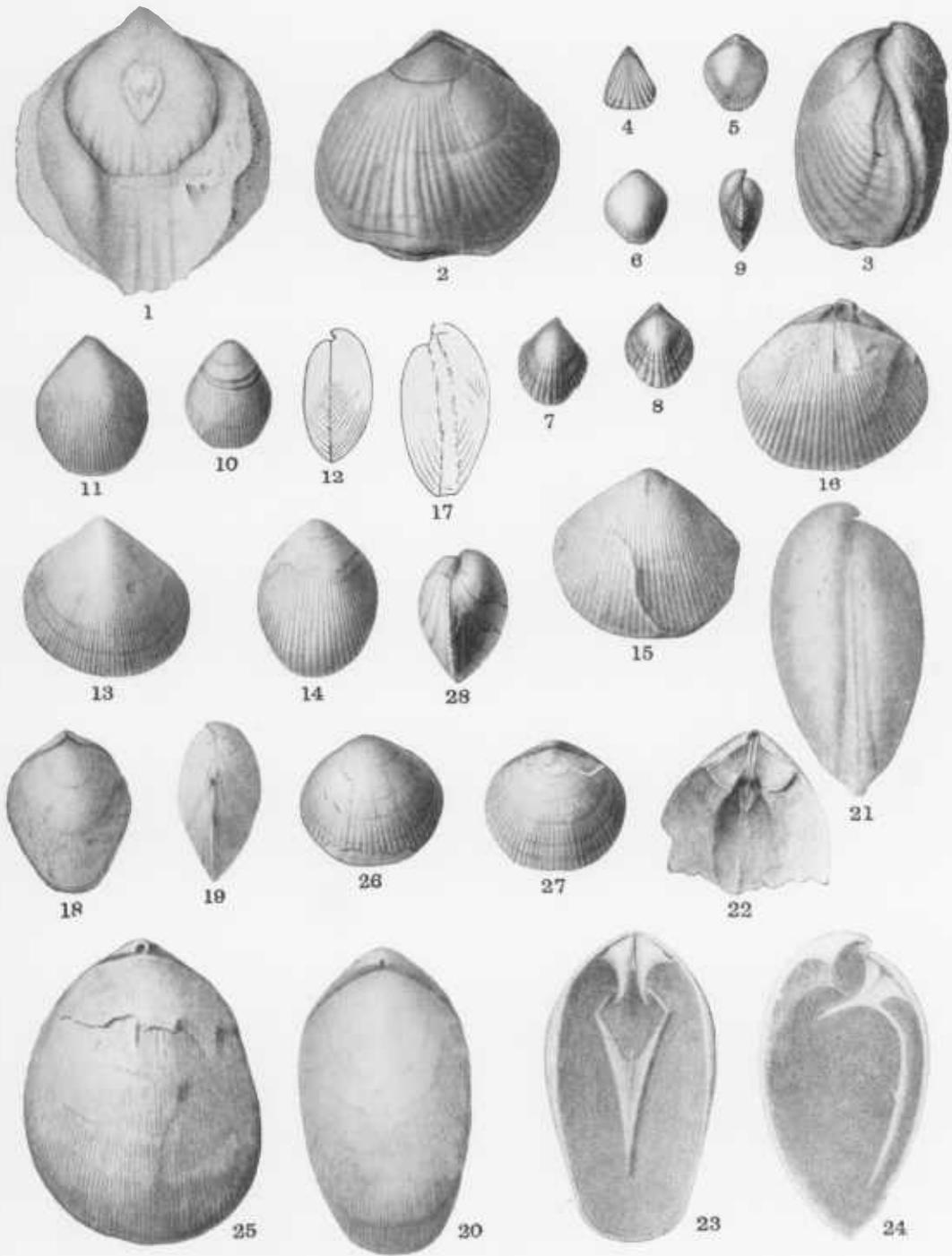
	PAGE
Figs. 1-6. <i>UNCINULUS GORDONI</i> Maynard n. sp.....	367
1, 2. Dorsal and ventral views.	
3, 4. Anterior and ventral views of a smaller specimen.	
5, 6. Anterior and side views of a gibbous form.	
Helderberg formation, Keyser member, Cash Valley.	
Figs. 7, 8. <i>UNCINULUS KEYSERENSIS</i> Schuchert n. sp.....	368
Dorsal and side views. Helderberg formation, Keyser member,	
Keyser, W. Va.	
Figs. 9-14. <i>UNCINULUS CONVEXORUS</i> Maynard n. sp.....	368
9. Dorsal view of individual with coarse plications.	
10-13. Side, dorsal, ventral, and anterior views.	
14. View of large ventral valve with fine plications.	
Helderberg formation, Keyser member, Keyser, W. Va.	
Figs. 15-17. <i>WILSONIA GLOBOSA</i> Weller.....	369
Side, dorsal, and ventral views. Helderberg formation, Keyser	
member, Cash Valley.	
Figs. 18-20. <i>WILSONIA</i> cf. <i>GLOBOSA</i> Weller.....	370
Side, ventral, and dorsal views. Helderberg formation, Keyser mem-	
ber, Tonoloway.	
Figs. 21, 22. <i>EATONIA SINGULARIS</i> (Vanuxem).....	371
Dorsal and ventral views. Helderberg formation, New Scotland mem-	
ber, Corriganville.	
Figs. 23-28. <i>EATONIA PECULIARIS</i> (Conrad).....	372
23, 24. Dorsal and ventral views.	
25, 26. Interior of dorsal and ventral valves. (After Hall.)	
Oriskany formation, Ridgely member, Cumberland.	
27, 28. Ventral and dorsal views of internal cast. New Scotland forma-	
tion, New York.	
Figs. 29, 30. <i>EATONIA WHITFIELDI</i> Hall.....	373
29. Ventral valve. $\times 2$ .	
30. A water-worn dorsal valve. $\times 2$ .	
Oriskany formation, Ridgely member, Cumberland.	
Figs. 31-35. <i>EATONIA MEDIALIS</i> (Vanuxem).....	374
31. Dorsal view of a large specimen.	
32, 33. Ventral and side views.	
34, 35. Dorsal and ventral views of internal cast of a small individual.	
New Scotland formation, New York.	
Figs. 36-38. <i>EATONIA SINUATA</i> Hall.....	375
36, 37. Dorsal and ventral views.	
38. Interior of ventral valve.	
Oriskany formation, Ridgely member, Cumberland.	



MOLLUSCOIDEA—BRACHIOPODA

PLATE LXVI

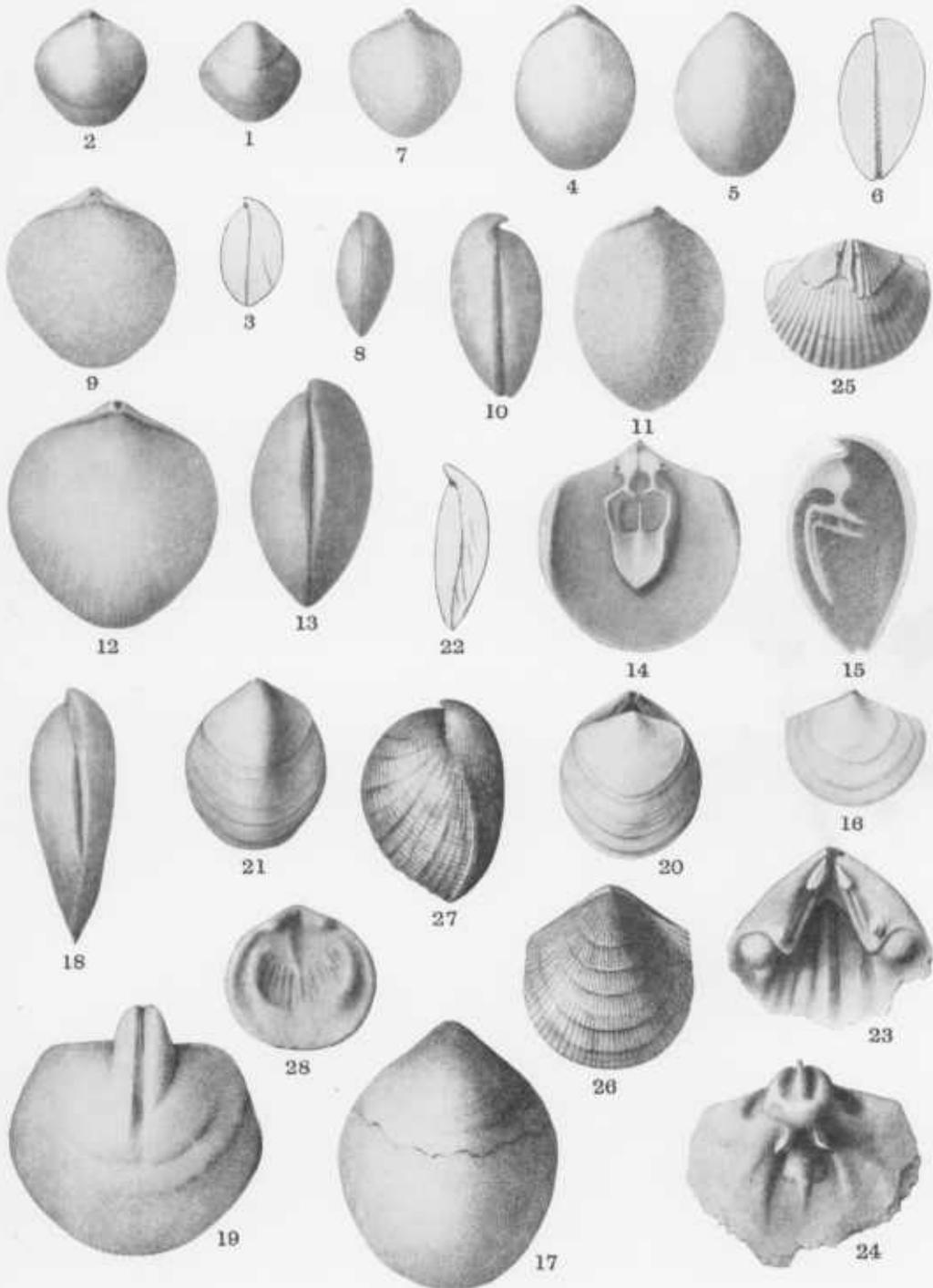
	PAGE
Fig. 1. <i>EATONIA SINUATA</i> Hall.....	375
Internal cast of ventral valve. Oriskany formation, Ridgely member, Cumberland. (After Hall.)	
Figs. 2, 3. <i>EATONIA HARTLEYI</i> Schuchert n. sp.....	376
Dorsal and side views. Oriskany formation, Ridgely member, Martin Mountain, Allegany County.	
Fig. 4. <i>RHYNCHONELLA</i> (?) <i>BIALVEATA</i> Hall.....	377
Dorsal view. $\times 2$ . New Scotland formation, New York.	
Figs. 5, 6. <i>RENSELÆRIA MUTABILIS</i> (Hall).....	378
Dorsal and ventral views. Helderberg formation, Keyser member, Cumberland.	
Figs. 7-9. <i>RENSELÆRIA MUTABILIS</i> VAR.....	378
Ventral, dorsal, and side views. Helderberg formation, Keyser member, Tonoloway.	
Figs. 10-12. <i>RENSELÆRIA SUBGLOBOSA</i> Weller.....	379
10. Ventral valve.	
11, 12. Ventral and side views of an average individual. Helderberg formation, Becraft member, Cherry Run, W. Va.	
Fig. 13. <i>RENSELÆRIA SUBGLOBOSA</i> VAR. <i>AVUS</i> Schuchert n. var.....	380
Ventral valve, slightly distorted. Helderberg formation, Becraft member, Cherry Run, W. Va.	
Fig. 14. <i>RENSELÆRIA SUBGLOBOSA</i> VAR. <i>CRASSA</i> Schuchert n. var.....	381
Ventral valve showing the coarser striae. Helderberg formation, Becraft member, Licking Creek, Pa.	
Figs. 15-17. <i>RENSELÆRIA CIRCULARIS</i> Schuchert n. sp.....	381
Ventral, dorsal, and side views. Oriskany formation, Ridgely mem- ber, Cumberland.	
Figs. 18-24. <i>RENSELÆRIA MARYLANDICA</i> Hall.....	382
18, 19. Dorsal and side views of a small specimen.	
20, 21. Dorsal and side views of an average specimen.	
22. Interior of ventral valve.	
23. Interior of dorsal valve to show the large crural plates and the pointed brachidium which supports the fleshy arms.	
24. Median section of shell to show the various plates, thickening of the posterior region of the valves, and the position of the jugum. Oriskany formation, Ridgely member, Cumberland. (After Hall.)	
Fig. 25. <i>RENSELÆRIA MARYLANDICA</i> VAR. <i>SYMMETRICA</i> Schuchert n. var..	384
Dorsal view. Oriskany formation, Ridgely member, Cumberland.	
Figs. 26-28. <i>RENSELÆRIA KEYSERENSIS</i> Swartz n. sp.....	384
Ventral, dorsal, and side views of type. Helderberg formation, Keyser member, $\frac{3}{4}$ mile southwest of Rawlings.	



MOLLUSCOIDEA—BRACHIOPODA

PLATE LXVII

	PAGE
Figs. 1-3. <i>RENSELÆRIA (BEACHIA) PROAVITA</i> Schuchert n. sp. ....	385
1. Ventral valve. $\times 1\frac{1}{2}$ .	
2, 3. Dorsal and side views of another specimen. $\times 1\frac{1}{2}$ . Helderberg formation, Keyser member, Pinto.	
Figs. 4-6. <i>RENSELÆRIA (BEACHIA) CUMBERLANDIÆ</i> (Hall) .....	386
Dorsal, ventral, and side views. Oriskany formation, Ridgely member, Cumberland.	
Figs. 7-15. <i>RENSELÆRIA (BEACHIA) SUESSANA</i> (Hall) .....	387
7, 8. Dorsal and side views of a small specimen.	
9, 10. Same of an average specimen.	
11. Dorsal view of an elongate specimen.	
12, 13. Dorsal and side views of a large specimen.	
14. Interior of dorsal valve.	
15. Longitudinal section of valves showing crura and appendages. Oriskany formation, Ridgely member, Cumberland. (After Hall.)	
Fig. 16. <i>RENSELÆRIA (BEACHIA) SUESSANA</i> VAR. <i>IMMATURA</i> Schuchert n. var. ....	388
Dorsal valve. $\times 1\frac{1}{2}$ . Oriskany formation, Shriver member, Cash Valley, Cumberland.	
Figs. 17-19. <i>RENSELÆRIA (BEACHIA) OVALIS</i> (Hall) .....	389
17, 18. Ventral and side views.	
19. Internal cast of ventral valve. Oriskany formation, New York.	
Figs. 20-24. <i>ORISKANIA LUCERNA</i> Schuchert n. sp. ....	390
20-22. Dorsal, ventral, and side views.	
23, 24. Interior of ventral and dorsal valves. $\times 2$ . Oriskany formation, Ridgely member, Cumberland.	
Fig. 25. <i>TROPIDOLEPTUS CARINATUS</i> (Conrad) .....	390
Ventral valve. Oriskany formation, Ridgely member, Cumberland.	
Figs. 26-28. <i>ATRYPA RETICULARIS</i> (Linné) .....	392
26, 27. Dorsal and side views.	
28. Interior of ventral valve. New Scotland formation, New York.	



MOLLUSCOIDEA—BRACHIOPODA

PLATE LXVIII

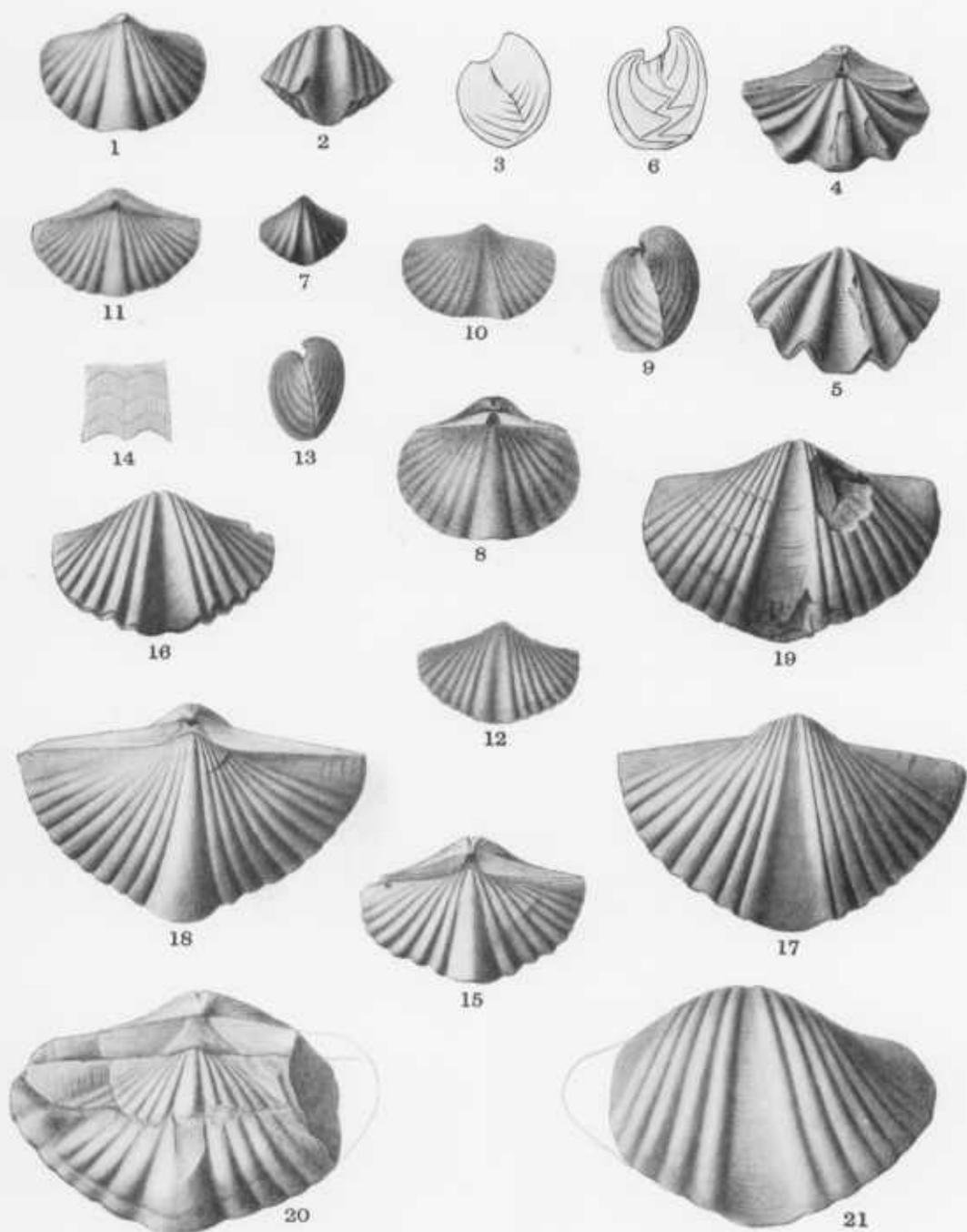
	PAGE
Figs. 1-3. <i>ATRYPA ? BICONVEXA</i> Maynard n. sp.....	393
1, 2. Ventral and dorsal views. Keyser, W. Va.	
3. Dorsal view of another example. Cash Valley, Cumberland. Helderberg formation, Keyser member.	
Figs. 4-6. <i>ATRYPINA IMBRICATA</i> (Hall).....	394
4, 5. Ventral and dorsal views.	
6. Dorsal view. × 3. New Scotland formation, New York.	
Figs. 7, 8. <i>SPIRIFER MACROPLEURUS</i> (Conrad).....	396
Dorsal and ventral valves. Helderberg formation, New Scotland mem- ber, Corriganville.	
Figs. 9-16. <i>SPIRIFER CUMBERLANDIÆ</i> Hall.....	398
9-11. Dorsal, ventral, and side views of a small specimen.	
12-14. Same views of an average specimen.	
15, 16. Interior of ventral and dorsal valves. Oriskany formation, Ridgely member, Cumberland. (After Hall.)	
Figs. 17-22. <i>SPIRIFER MODESTUS</i> Hall.....	399
17, 18. Dorsal and front view.	
19-21. Dorsal, ventral, and side views of a larger individual.	
22. Interior of ventral valve. Helderberg formation, Keyser member, Cumberland. (After Hall.)	
Figs. 23, 24. <i>SPIRIFER MODESTUS VAR. PLICATUS</i> Maynard n. var.....	400
Dorsal and ventral views of type. Helderberg formation, Keyser member, Keyser, W. Va.	
Figs. 25-29. <i>SPIRIFER OCTOCOSTATUS</i> Hall.....	401
25-28. Ventral, dorsal, side, and cardinal views.	
29. Interior of ventral valve. Helderberg formation, Keyser member, Cumberland. (After Hall.)	
Figs. 30, 31. <i>SPIRIFER PAUCICOSTATUS</i> Schuchert n. sp.....	402
Internal casts of dorsal and ventral valves. × 3. Oriskany forma- tion, Shriver member, Cash Valley.	
Figs. 32, 33. <i>SPIRIFER VANUXEMI</i> Hall.....	403
Ventral and dorsal views. Manlius formation, New York.	
Figs. 34, 35. <i>SPIRIFER VANUXEMI VAR. PROGNOSTICA</i> Schuchert n. var.....	403
Ventral and dorsal views. Helderberg formation, Keyser member, ¾ mile southwest of Rawlings.	



MOLLUSCOIDEA—BRACHIOPODA

PLATE LXIX

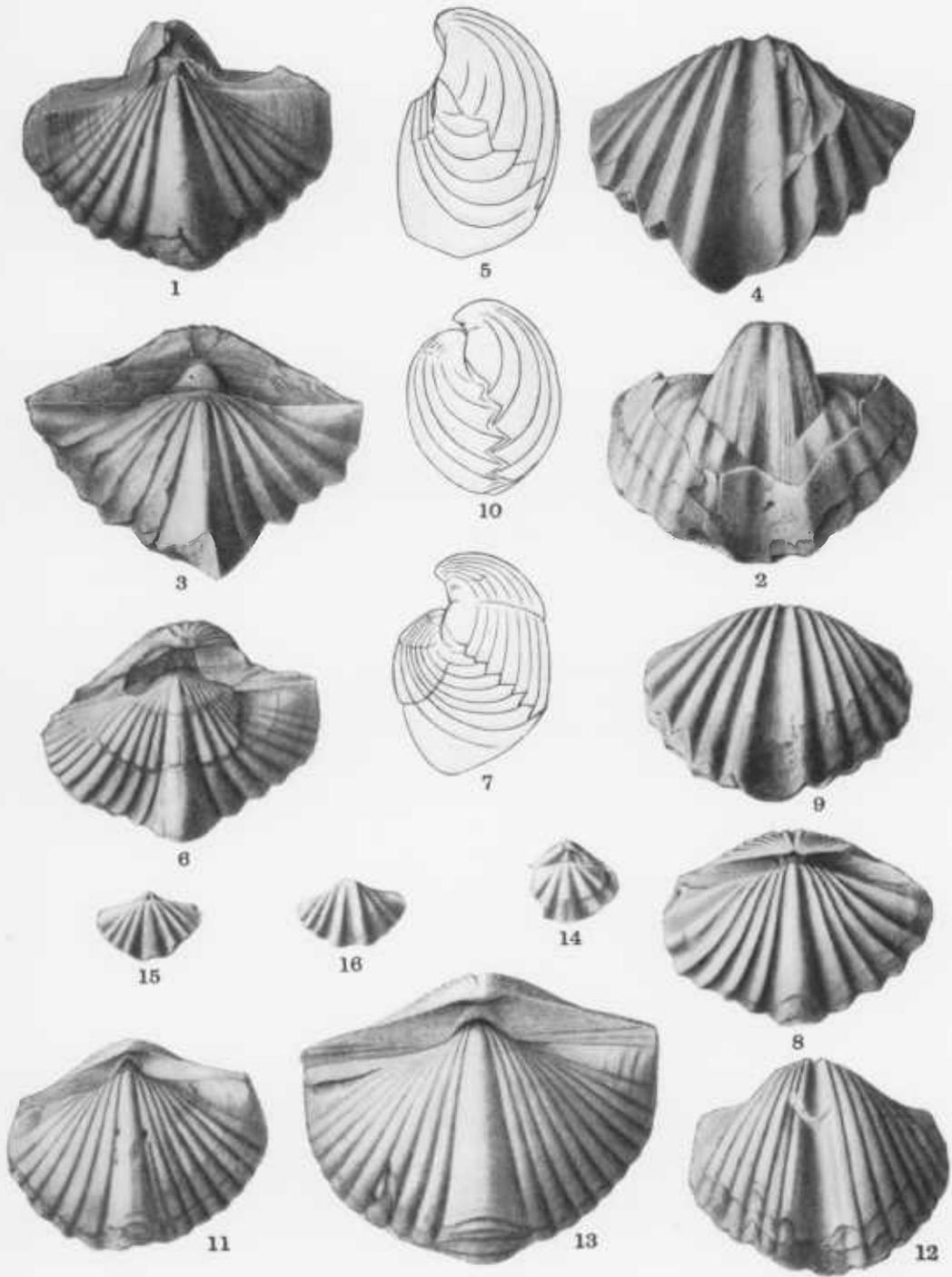
	PAGE
Figs. 1-3. <i>SPIRIFER VANUXEMI</i> VAR. <i>PROGNOSTICUS</i> Schuchert n. var. ....	403
1. Dorsal view of a large specimen. × 2.	
2, 3. Anterior and side views of a smaller individual. × 2.	
Helderberg formation, Keyser member, Pinto.	
Figs. 4-6. <i>SPIRIFER PERLAMELLOSUS</i> Hall. ....	397
Dorsal, ventral and side views. Helderberg formation, New Scotland member, Cumberland.	
Fig. 7. <i>SPIRIFER ERIENSIS</i> Grabau. ....	404
Ventral valve. Helderberg formation, Keyser member, Cash Valley.	
Figs. 8-10. <i>SPIRIFER CYCLOPTERUS</i> Hall. ....	406
8, 9. Dorsal and side views of average specimen.	
10. Ventral valve of a smaller specimen.	
New Scotland formation, New York.	
Figs. 11-14. <i>SPIRIFER TRIBULIS</i> Hall. ....	407
11-13. Dorsal, ventral, and side views.	
14. A portion of the surface lamellæ much magnified to show the finely spinose margins.	
Helderberg formation, New Scotland member, Cumberland.	
(After Hall.)	
Figs. 15, 16. <i>SPIRIFER ANGULARIS</i> Schuchert n. sp. ....	409
Dorsal and ventral views of a large specimen. Oriskany formation, Ridgely member, Cumberland.	
Figs. 17-21. <i>SPIRIFER INTERMEDIUS</i> Hall. ....	409
17, 18. Ventral and dorsal views of Cumberland specimen.	
19. Ventral valve with a wider sinus. Cumberland.	
20, 21. Dorsal and ventral views of an average specimen from Warren Point, Penna.	
Oriskany formation, Ridgely member.	



MOLLUSCOIDEA—BRACHIOPODA

PLATE LXX

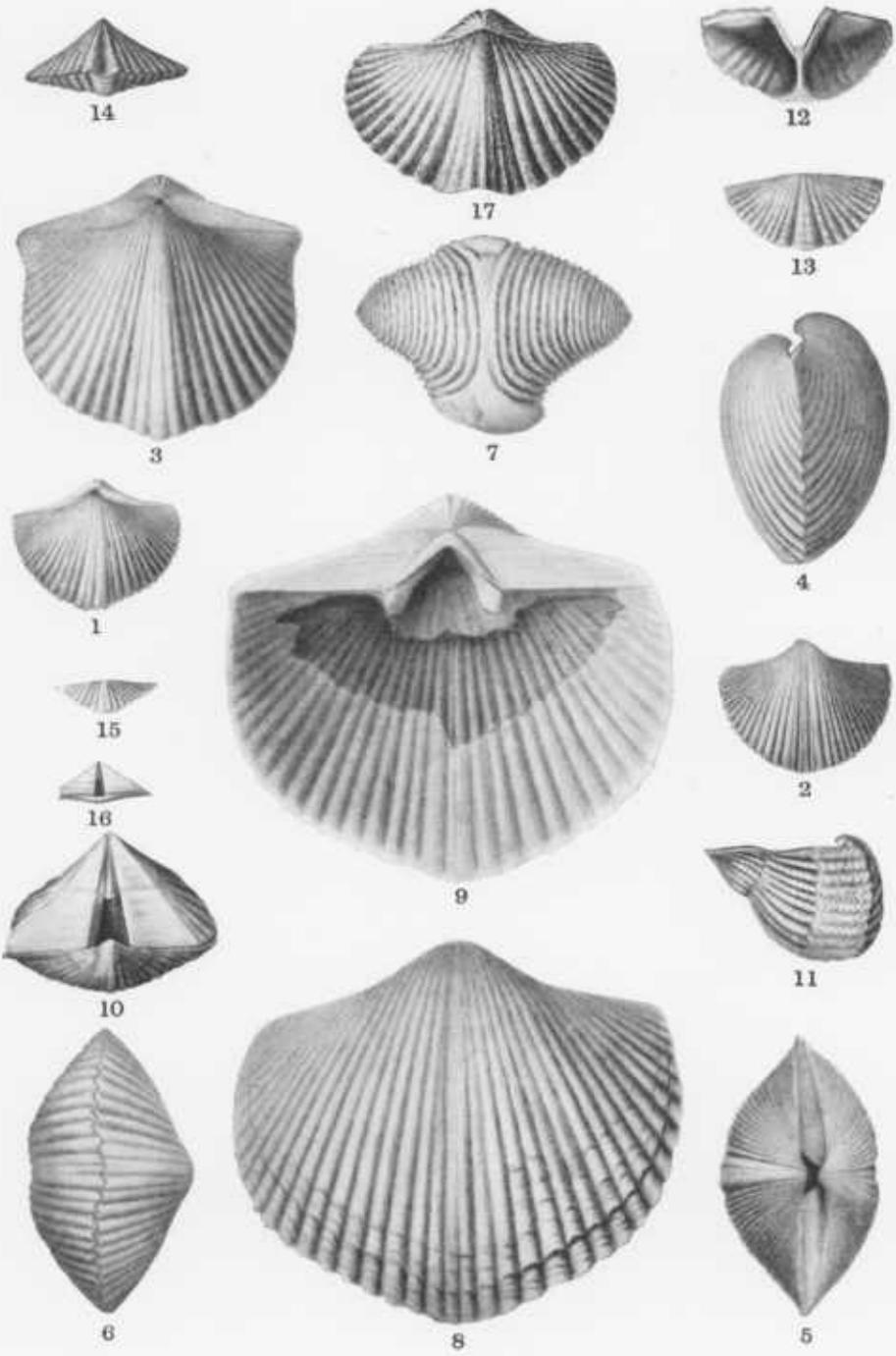
	PAGE
Figs. 1-5. <i>SPIRIFER MURCHISONI</i> Castelnau.....	411
1. Dorsal view of an average specimen. Cumberland.	
2. Internal cast of ventral valve retaining portion of shell, same locality.	
3-5. Dorsal, ventral, and side views of the form with angular plications. Warren Point, Penna. Oriskany formation, Ridgely member.	
Figs. 6, 7. <i>SPIRIFER MURCHISONI</i> VAR. <i>MARYLANDICUS</i> Schuchert n. var....	413
Dorsal and side views. Oriskany formation, Ridgely member, Cumberland.	
Figs. 8-10. <i>SPIRIFER HARTLEYI</i> Schuchert n. sp.....	413
Dorsal, ventral, and side views of the type. Oriskany formation, Ridgely member, Cumberland.	
Figs. 11-13. <i>SPIRIFER PERDEWI</i> Schuchert.....	414
11, 12. Dorsal and ventral views of a small specimen.	
13. Dorsal view of a large specimen. Oriskany formation, Ridgely member, Cumberland.	
Figs. 14-16. <i>SPIRIFER TRIBUARIUS</i> Schuchert n. sp.....	414
14. Dorsal view.	
15, 16. Dorsal and ventral views of another individual. Oriskany formation, Shriver member, Cumberland.	



MOLLUSCOIDEA—BRACHIPODA

PLATE LXXI

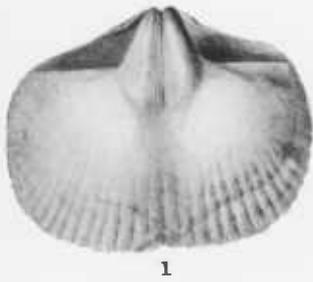
	PAGE
Figs. 1-9. <i>SPIRIFER ARENOSUS</i> (Conrad).....	415
1, 2. Dorsal and ventral views of a young individual.	
3-6. Dorsal, side, cardinal and anterior views of an average specimen.	
7. The spiralia silicified.	
8, 9. Exterior and interior of a large ventral valve.	
Oriskany formation, Ridgely member, Cumberland. (After Hall.)	
Figs. 10-16. <i>CYRTINA ROSTRATA</i> (Hall).....	423
10, 11. Cardinal and side views of a large specimen.	
12. Interior of ventral valve.	
13. Dorsal valve.	
14. Anterior view of an alate specimen.	
15, 16. Dorsal and cardinal views of a small specimen.	
Oriskany formation, New York.	
Fig. 17. <i>SPIRIFER PROAVITUS</i> Schuchert n. sp.....	418
Dorsal view of type. Helderberg formation, New York.	



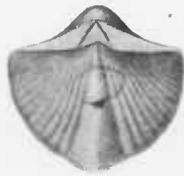
MOLLUSCOIDEA—BRACHIOPODA

PLATE LXXII

	PAGE
Fig. 1. <i>SPIRIFER ARENOSUS</i> (Conrad).....	415
Internal cast of ventral valve. Oriskany formation, New York.	
Figs. 2, 3. <i>SPIRIFER CONCINNUS</i> Hall.....	417
Dorsal and ventral views. Becraft formation, New York.	
Fig. 4. <i>SPIRIFER CONCINNOIDEUS</i> Schuchert n. sp.....	419
Internal cast of dorsal valve. Oriskany formation, Ridgely member, Pendleton County, W. Va.	
Figs. 5-7. <i>SPIRIFER GORDONI</i> Schuchert n. sp.....	420
Dorsal, ventral, and side views of the type. Oriskany formation, Ridgely member, Cumberland.	
Figs. 8-10. <i>RETICULARIA BICOSTATA</i> (Vanuxem).....	420
8, 9. Ventral and dorsal views.	
10. Dorsal view of a specimen showing stronger plications. Niagara formation, New York.	
Figs. 11, 12. <i>METAPLASIA PYXIDATA</i> (Hall).....	422
Dorsal and ventral views. × 2. Oriskany formation, Ridgely member, Cumberland.	
Figs. 13-15. <i>RHYNCHOSPIRA RECTIROSTRIS</i> (Hall).....	424
Dorsal, ventral, and side views of the type. Oriskany formation, Ridgely member, Cumberland. (After Hall.)	
Figs. 16-25. <i>RHYNCHOSPIRA GLOBOSA</i> (Hall).....	425
16-18. Ventral, dorsal, and side views of an exfoliated specimen. Tonoloway.	
19. Side view of unusually large and gibbous specimen. Tonoloway.	
20-22. Dorsal, ventral, and side views. Cumberland. Helderberg formation, Keyser member.	
23. Side view of gibbous specimen.	
24-25. Dorsal and ventral views. New Scotland formation, New York.	
Figs. 26-30. <i>RHYNCHOSPIRA FORMOSA</i> Hall.....	426
26. Side view of doubtfully determined specimen having striæ coarser than usual, beak erect. Helderberg formation, Keyser member. Cash Valley.	
27-29. Dorsal, ventral and side views.	
30. Dorsal view of individual with finer plications. New Scotland formation, New York.	



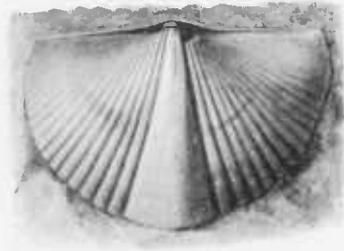
1



2



3



4



5



7



6



8



9



10



11



12



13



14



15



19



16



17



18



20



21



22



23



24



25



26



27



28



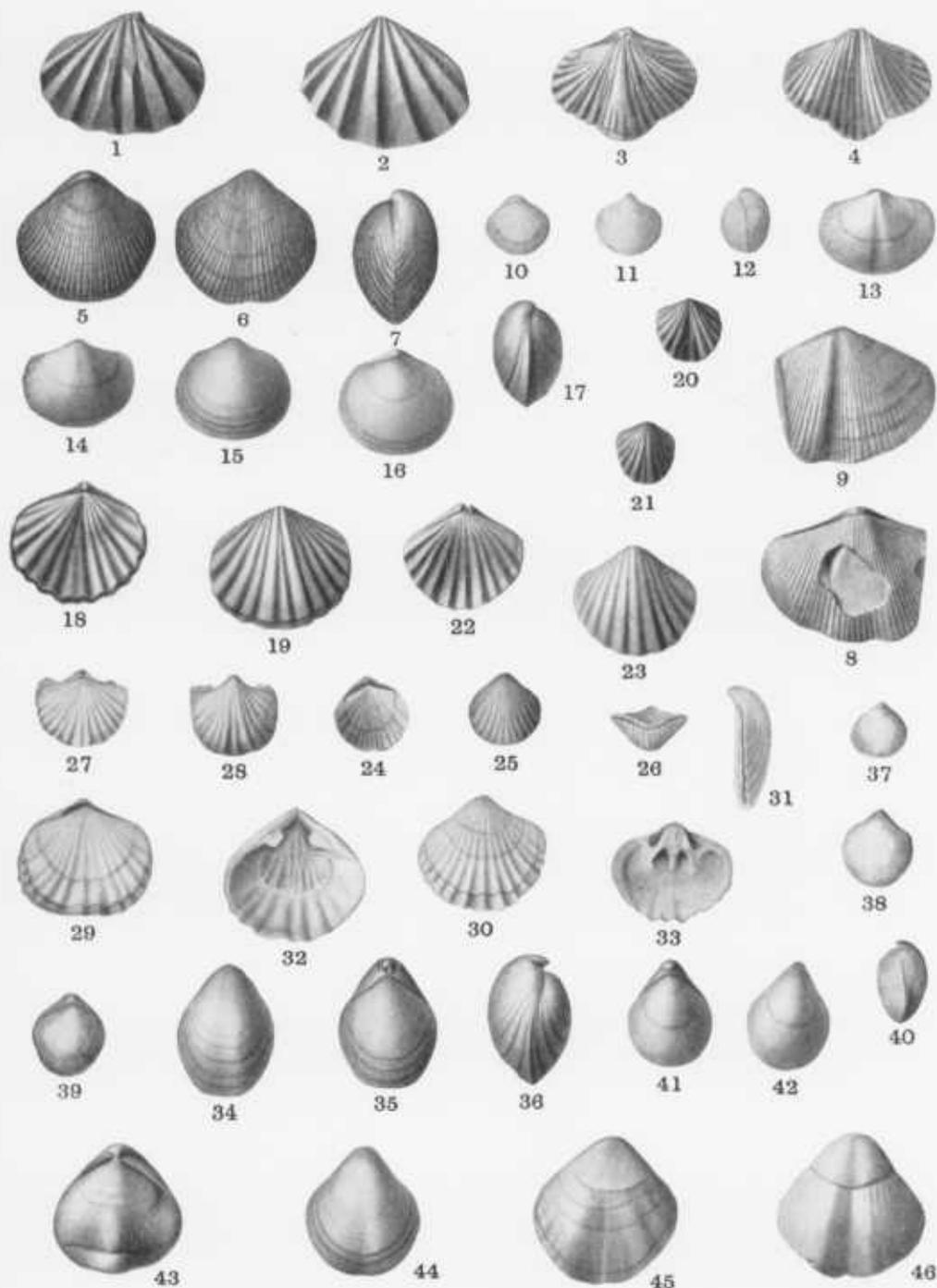
29



30

PLATE LXXIII

	PAGE
Figs. 1, 2. <i>TREMATOSPIRA SIMPLEX</i> Hall ?.....	427
Dorsal and ventral views. $\times 2$ . Helderberg formation, New Scotland member, Devil's Backbone.	
Figs. 3, 4. <i>TREMATOSPIRA MULTISTRIATA</i> (Hall).....	428
Dorsal and ventral views. Helderberg formation, New Scotland member, Corriganville.	
Figs. 5-7. <i>TREMATOSPIRA DEWEYI</i> (Hall).....	429
Dorsal, ventral and side views. New Scotland formation, New York.	
Figs. 8, 9. <i>TREMATOSPIRA EQUISTRIATA</i> Hall and Clarke.....	430
Dorsal and ventral views. Helderberg formation, New Scotland member, Corriganville.	
Figs. 10-12. <i>NUCLEOSPIRA VENTRICOSA</i> (Hall).....	430
Dorsal, ventral, and side views. New Scotland formation, New York.	
Figs. 13, 14. <i>NUCLEOSPIRA ELEGANS</i> Hall.....	431
Dorsal and ventral views. The sinus in the dorsal valve is drawn too angularly. $\times 1\frac{1}{2}$ . Helderberg formation, New Scotland member, Corriganville.	
Figs. 15-17. <i>NUCLEOSPIRA SWARTZI</i> Maynard n. sp.....	432
Ventral, dorsal and side views. Helderberg formation, Keyser member, Keyser, W. Va.	
Figs. 18, 19. <i>ANOPLOTHECA CONCAVA</i> (Hall).....	434
Dorsal and ventral views. $\times 3$ . Helderberg formation, New Scotland member, Corriganville.	
Figs. 20, 21. <i>ANOPLOTHECA CONCAVA</i> VAR. <i>TONOLOWAYENSIS</i> Swartz n. var..	434
Dorsal and ventral views. $\times 2$ . Helderberg formation, Keyser member, Tonoloway.	
Figs. 22, 23. <i>ANOPLOTHECA EQUISTRIATA</i> Schuchert n. sp.....	435
Dorsal and ventral views. $\times 2$ . Oriskany formation, Ridgely member, Cumberland.	
Figs. 24-26. <i>ANOPLOTHECA DICTOMA</i> (Hall).....	435
24, 25. Dorsal and ventral views.	
26. Anterior view to show concave dorsal valve.	
Oriskany formation, Ridgely member, Cumberland. (After Hall.)	
Figs. 27, 28. <i>ANOPLOTHECA (LEPTOCÆLIA) FIMBRIATA</i> (Hall).....	436
Dorsal and ventral views. Oriskany formation, Ridgely member, Cumberland. (After Hall.)	
Figs. 29-33. <i>ANOPLOTHECA (LEPTOCÆLIA) FLABELLITES</i> (Conrad).....	438
29-31. Dorsal, ventral, and side views.	
32, 33. Interior ventral and dorsal valves.	
Oriskany formation, Ridgely member, Cumberland. (After Hall.)	
Figs. 34-36. <i>WHITFIELDELLA</i> (?) <i>PROSSERI</i> Grabau.....	439
Ventral, dorsal, and side views. Helderberg formation, Cherry Run, W. Va.	
Figs. 37-40. <i>WHITFIELDELLA</i> (?) <i>NUCLEOLATA</i> Hall.....	441
37. Dorsal view of small specimen.	
38-40. Ventral, dorsal, and side views.	
Cobleskill formation, New York.	
Figs. 41, 42. <i>WHITFIELDELLA</i> (?) <i>MINUTA</i> Maynard n. sp.....	442
Dorsal and ventral views. $\times 5$ . Helderberg formation, Keyser member, Round Top.	
Figs. 43-46. <i>MERISTELLA PRÆNUNTIA</i> Schuchert n. sp.....	443
43. Dorsal view of specimen with strong median fold.	
44-46. Ventral valves showing differences in development of sinuses.	
Helderberg formation, Keyser member, Keyser, W. Va.	



MOLLUSCOIDEA—BRACHIOPODA

PLATE LXXIV

	PAGE
Figs. 1-4. <i>MERISTELLA PRÆNUNTIA</i> Schuchert n. sp. ....	443
1. Dorsal view.	
2-4. Dorsal, side, and ventral views of a large and gibbous specimen. Heiderberg formation, Keyser member, Keyser, W. Va.	
Figs. 5-8. <i>MERISTELLA ARCUATA</i> (Hall) .....	444
5, 6. Dorsal and side views.	
7. Anterior view to show depth of ventral sinus.	
8. Small ventral valve. New Scotland formation, New York.	
Figs. 9-11. <i>MERISTELLA LATA</i> (Hall) .....	445
9, 10. Ventral view of different specimens.	
11. Dorsal view of another specimen. Oriskany formation, Ridgely member, Warren Point, Penna.	
Figs. 12, 13. <i>MERISTELLA LENTIFORMIS</i> Clarke .....	446
Dorsal and side views of type. Oriskany formation, New York.	
Figs. 14, 15. <i>MERISTELLA ROSTELLATA</i> Schuchert n. sp. ....	447
Dorsal and ventral views of type. Oriskany formation, Ridgely member. Cumberland.	
Figs. 16-19. <i>MERISTELLA SYMMETRICA</i> Schuchert n. sp. ....	448
16, 17. Dorsal and side views of a small individual.	
18. Ventral view of a large specimen.	
19. Ventral view of an unusually large specimen. Oriskany formation, Ridgely member, Cumberland.	
Figs. 20-24. <i>MERISTA TYPA</i> (Hall) .....	449
20. Dorsal view.	
21, 22. Interiors of ventral valves.	
23. A longitudinal section of fig. 22.	
24. Internal cast of ventral valve. Heiderberg formation, Keyser member, Cumberland. (After Hall.)	

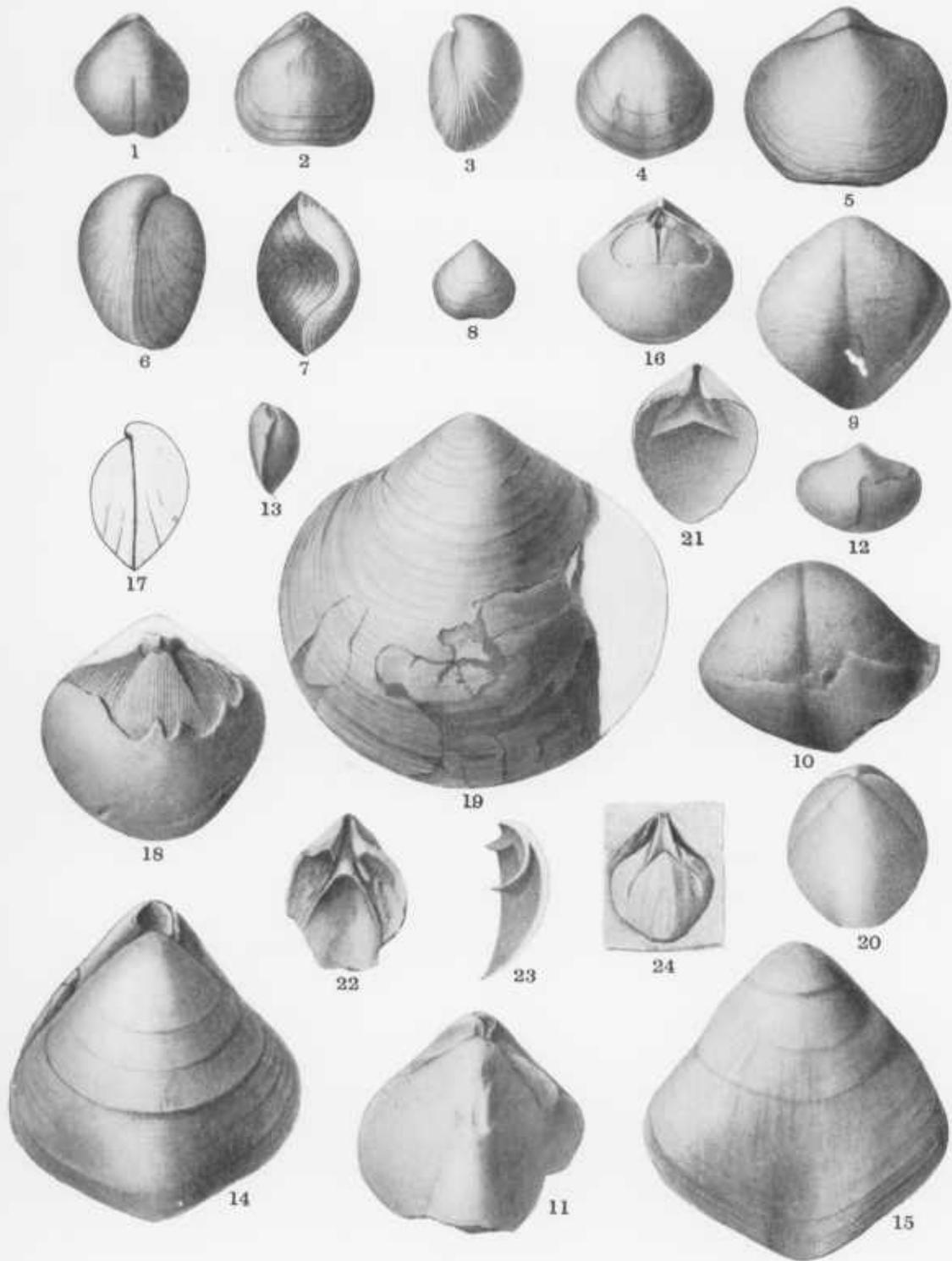
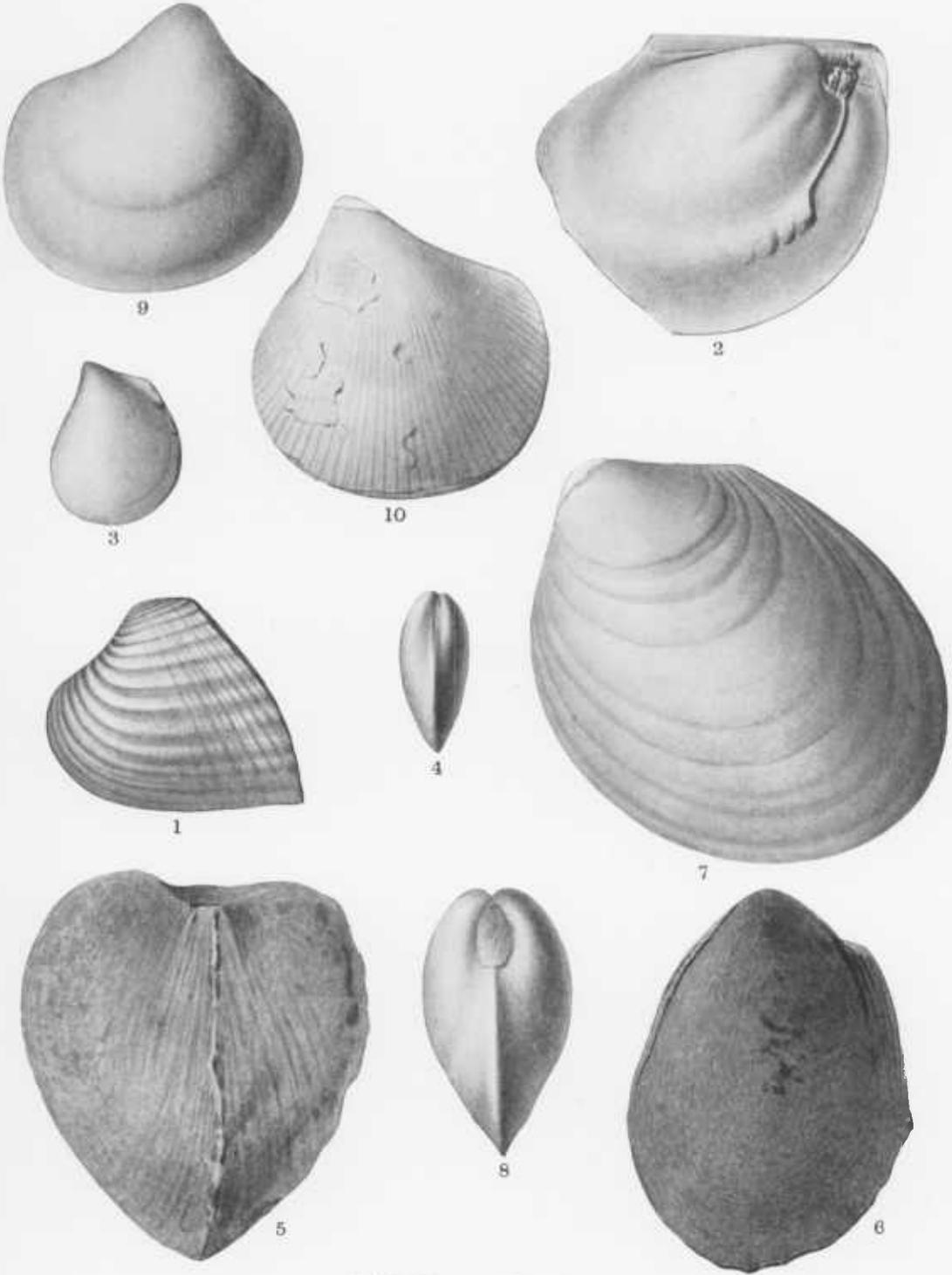


PLATE LXXV

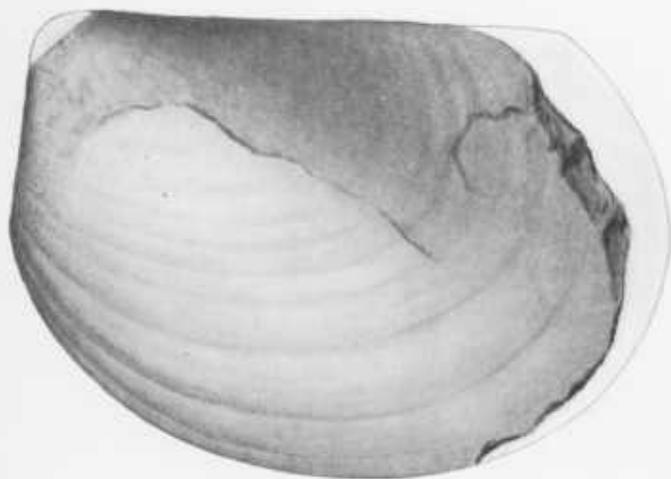
	PAGE
Fig. 1. GRAMMYSIA sp. ....	450
Anterior part of left valve. Helderberg formation, Keyser member, Keyser, W. Va.	
Fig. 2. LEPTODESMA (?) sp. ....	451
Internal cast of right valve. Oriskany formation, Ridgely member, Rock Enon Spring, W. Va.	
Figs. 3, 4. MYTILARCA MARYLANDICA Ohern n. sp. ....	452
3. Internal cast of left valve.	
4. Anterior view of internal cast. Helderberg formation, Cumberland.	
Figs. 5, 6. MYTILARCA CORDIFORMIS (Hall) ....	452
5. Profile view from the anterior side of the shell.	
6. View of the right valve, having the posterior cardinal extension abraded. New Scotland formation, New York.	
Fig. 7. MYTILARCA (PLETHOMYTILUS) ROWEI Ohern n. sp. ....	453
Left valve. Oriskany formation, Ridgely member, Hancock.	
Figs. 8-10. AMPHICELIA ULRICHI Maynard n. sp. ....	453
8. Anterior view of internal cast.	
9. Internal cast of right valve.	
10. Left valve. Helderberg formation, Keyser member, Keyser, W. Va.	



MOLLUSCA—PELECYPODA

PLATE LXXVI

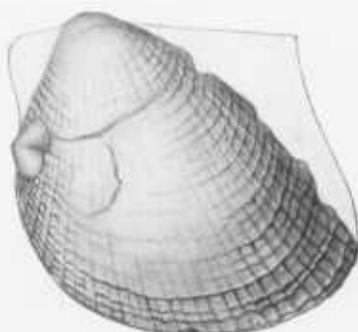
	PAGE
Fig. 1. PALEOPINNA LATA Ohern n. sp.....	454
Left valve. Oriskany formation, Ridgely member, Hancock.	
Figs. 2-4. ACTINOPTERIA COMMUNIS (Hall).....	455
2. Left valve of a large specimen. Helderberg formation, New Scotland member, Cumberland.	
3, 4. Left and right valves. Oriskany formation, Ridgely member, Cumberland.	
Fig. 5. ACTINOPTERIA TEXTILIS (Hall).....	456
Left valve. Helderberg formation, New Scotland member, Cumberland.	
Fig. 6. ACTINOPTERIA RETICULATA Weller.....	459
Left valve. Helderberg formation, Keyser member, Keyser, W. Va.	
Fig. 7. AVICULA RECTICOSTA Hall.....	460
Right valve. Oriskany formation, New York.	



1



4



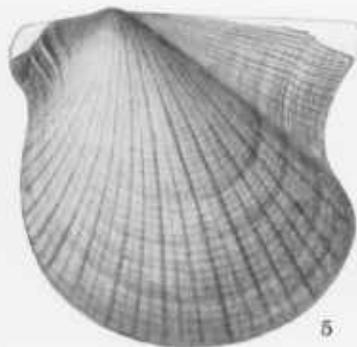
6



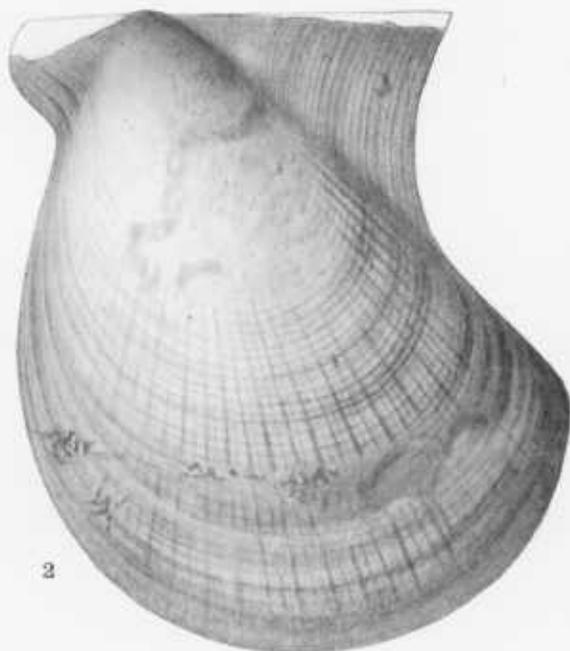
7



3



5



2

MOLLUSCA—PELECYPODA

PLATE LXXVII

	PAGE
Figs. 1, 2. ACTINOPTERIA TEXTILIS VAR. ARENARIA Hall.....	457
1. External cast of left valve. $\times \frac{2}{3}$ .	
2. Left valve weathered and exfoliated. $\times \frac{2}{3}$ .	
Oriskany formation, New York.	



MOLLUSCA—PELECYPODA

PLATE LXXVIII

	PAGE
Figs. 1, 2. <i>ACTINOPTERIA VIRGINICA</i> Ohern n. sp.....	458
1. Imperfect left valve, questionably referred to this species. Hancock.	
2. Left valve of type. Four miles southwest of Keyser, W. Va. Oriskany formation, Ridgely member.	
Fig. 3. <i>AVICULOPECTEN ? CUMBERLANDENSIS</i> Ohern n. sp.....	460
Left valve of type. Helderberg formation.	
Fig. 4. <i>AVICULOPECTEN TENUILAMELLATUS</i> Hall.....	461
Right valve partly exfoliated. New Scotland formation, New York.	
Fig. 5. <i>MEGAMBONIA LAMELLOSA</i> Hall.....	462
Left valve. Oriskany formation, Ridgely member, Cumberland.	
Figs. 6, 7. <i>CYPRICARDINIA CF. LAMELLOSA</i> Hall.....	463
6. Left valve.	
7. The same enlarged to nearly three diameters. New Scotland formation, New York.	
Fig. 8. <i>CYPRICARDINIA SUBLAMELLOSA</i> Hall.....	463
Right valve. New Scotland formation, New York.	
Figs. 9, 10. <i>ILIONIA SINUATA</i> Hall.....	464
9. The right valve of the specimen.	
10. Cardinal view of the same. Manlius formation, New York.	
Figs. 11, 12. <i>PTERINEA HALLI</i> Clarke.....	450
11. Left valve.	
12. Left valve partially exfoliated. New Scotland formation, New York.	



1



2



3



6



7



4



10



8



5



11



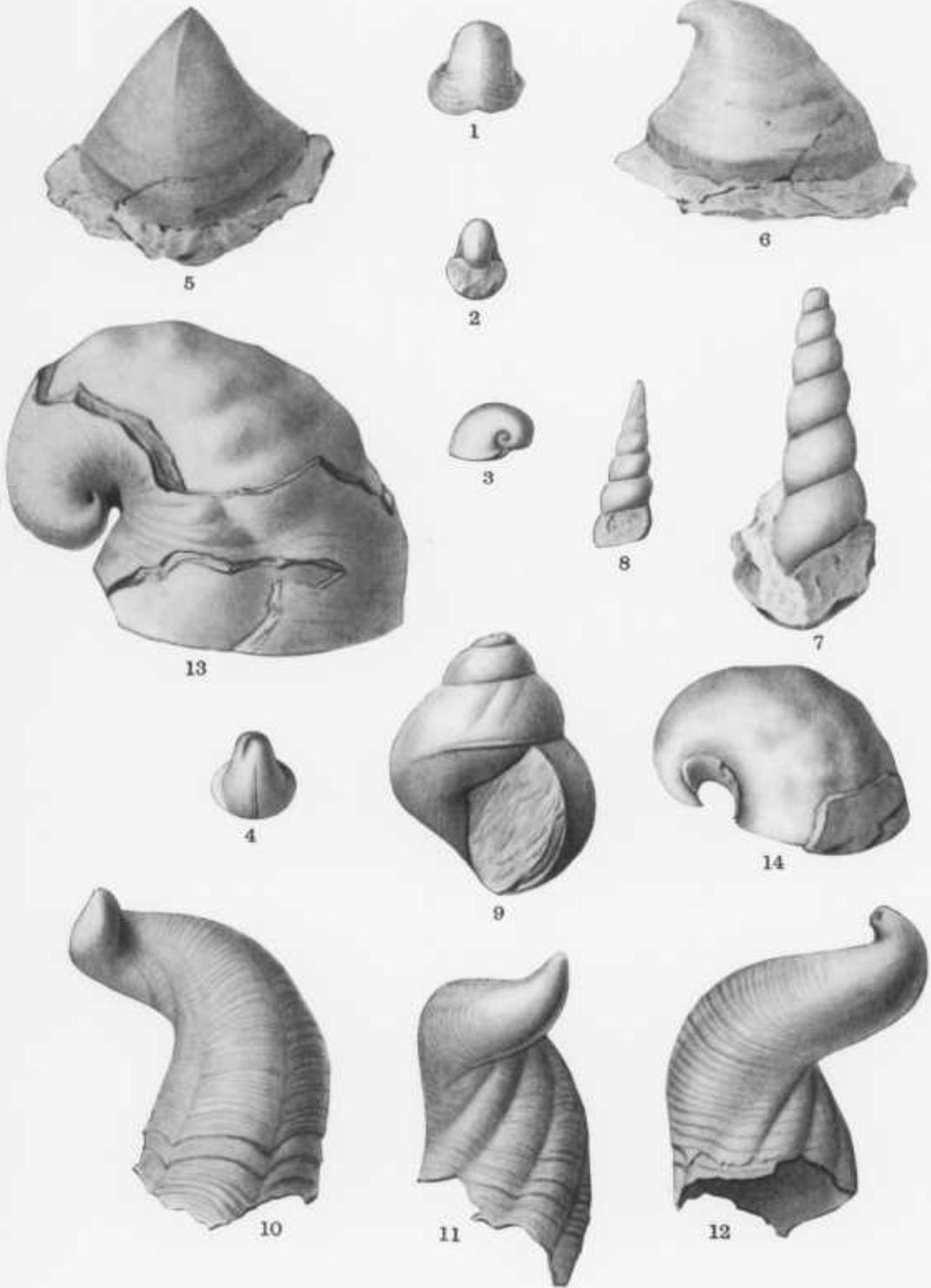
9



12

PLATE LXXIX

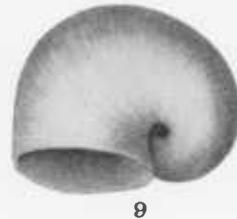
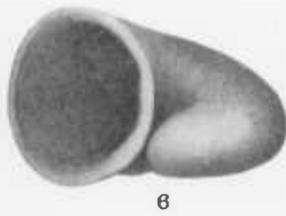
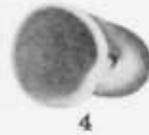
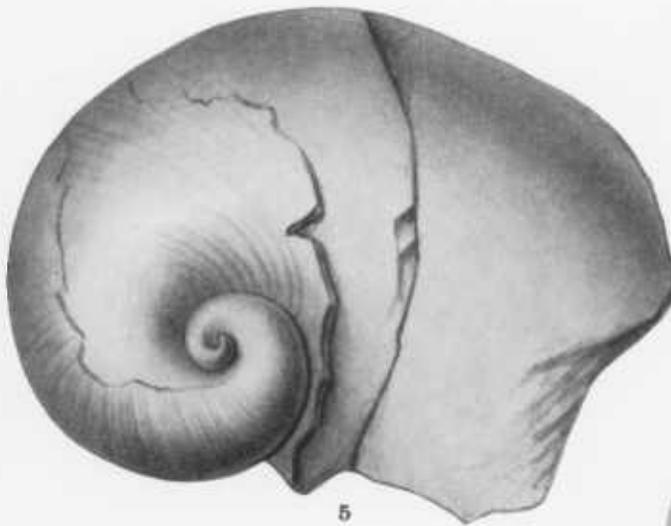
	PAGE
Figs. 1, 2. <i>BELLEROPHON</i> cf. <i>AURICULATUS</i> Hall.....	465
Dorsal and ventral views. Helderberg formation, Cumberland.	
Figs. 3, 4. <i>BELLEROPHON</i> <i>HELDERBERGLE</i> Swartz n. sp.....	466
Side and dorsal views of the type. Helderberg formation, Keyser member, Cash Valley.	
Figs. 5, 6. <i>CYRTOLITES</i> <i>EXPANSUS</i> Hall.....	466
Anterior and side views. Oriskany formation, New York.	
Fig. 7. <i>LOXONEMA</i> <i>FITCHI</i> Hall.....	467
Cast somewhat flattened. New Scotland formation, New York.	
Fig. 8. <i>LOXONEMA</i> sp. ....	468
Internal cast. Helderberg formation, Keyser member, Cash Valley.	
Fig. 9. <i>HOLOPEA</i> sp. ....	468
Ventral view. Helderberg formation, Cumberland.	
Figs. 10-12. <i>ORTHOONYCHIA</i> <i>TORTUOSA</i> (Hall).....	469
Views of shell in different positions. Oriskany formation, Ridgely member, Cumberland.	
Figs. 13, 14. <i>PLATYCERAS</i> <i>NODOSUM</i> Conrad.....	469
13. Large, partially exfoliated specimen.	
14. Internal cast of smaller specimen.	
Oriskany formation, Ridgely member, east side Nicholas Mountain.	



MOLLUSCA—GASTROPODA

PLATE LXXX

	PAGE
Fig. 1. PLEUROTOMARIA LABROSA Hall.....	465
Dorsal view of partially exfoliated specimen, preserving spiral band. Also an enlargement of the surface markings. Becraft formation, New York.	
Figs. 2-9. PLATYCERAS GERHARDI Conrad.....	470
2. Lower and upper views of a large specimen.	
3, 4. Upper and ventral views of small specimen.	
5. Upper view of very large specimen from Warren Point, Penna.	
6, 7. Ventral and upper views of specimen with free and expanded peristome.	
8, 9. Upper and lower views of specimen with free but not expanded peristome.	
Oriskany formation, Ridgely member, Cumberland. (All but fig. 5 after Hall.)	



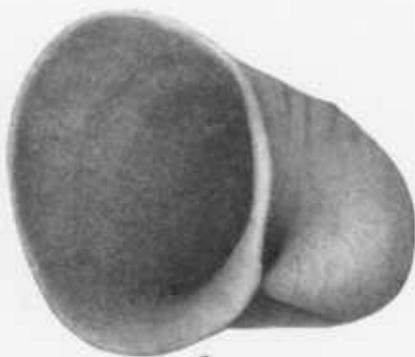
MOLLUSCA—GASTROPODA

PLATE LXXXI

	PAGE
Figs. 1-9. <i>PLATYCERAS GEBHARDI</i> VAR. <i>VENTRICOSUM</i> Conrad.....	471
1, 2. Upper and ventral views.	
3, 4. Ventral and upper views of a small individual.	
5, 6. Upper and ventral views of a specimen of medium size.	
7, 8. Upper and ventral views of a large specimen with contiguous volutions.	
9. Upper view showing a broad sinuosity in the margin. Oriskany formation, Ridgely member, Cumberland. (After Hall.)	



1



2



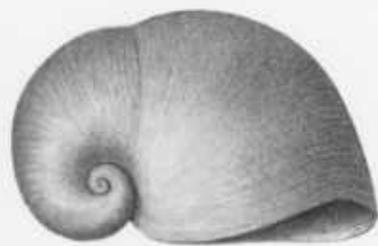
3



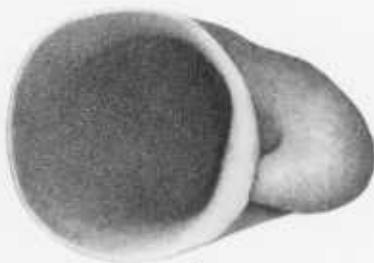
7



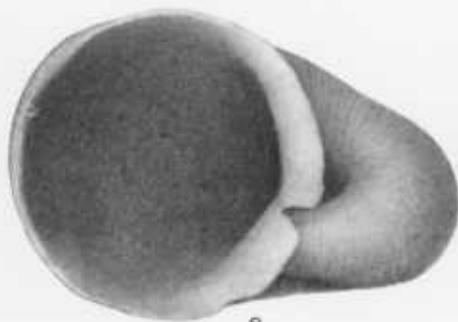
4



5



6



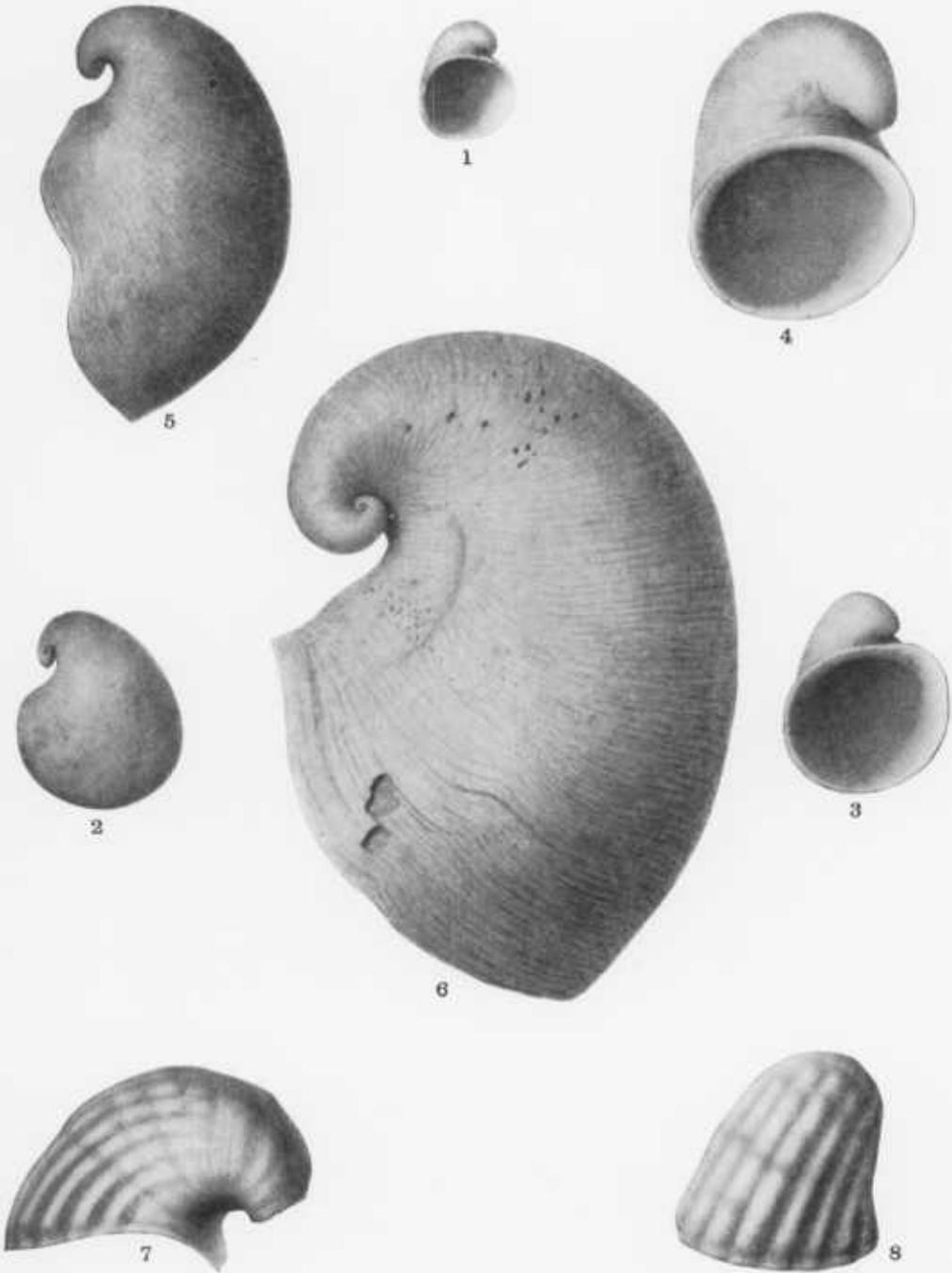
8



9

PLATE LXXXII

	PAGE
Figs. 1-6. <i>PLATYCERAS MAGNIFICUM</i> Hall.....	472
1. Ventral view of a young shell.	
2, 3. Dorsal and ventral views of a larger specimen with free volutions.	
4. Ventral view of a specimen with the volutions free and the peristome less expanded.	
5. Upper view.	
6. Upper view of the spire of a large specimen in which all the parts are symmetrical and well preserved, and the volutions are free except at the extreme apex.	
Oriskany formation, Ridgely member, Cumberland. (After Hall.)	
Figs. 7, 8. <i>PLATYCERAS SUBFALCATUM</i> Ohern n. sp.....	472
Side and dorsal views. Oriskany formation, Ridgely member, Hancock.	



MOLLUSCA—GASTROPODA

PLATE LXXXIII

	PAGE
Figs. 1-3. <i>PLATYCERAS SUBFALCUM</i> Ohern n. sp.....	472
1. Upper view of a large specimen.	
2, 3. Views of type.	
Oriskany formation, Ridgely member, Hancock.	
Fig. 4. <i>PLATYCERAS PATULUM</i> Hall.....	473
Ventral view. Oriskany formation, Ridgely member, Cumberland.	
(After Hall.)	
Figs. 5, 6. <i>PLATYCERAS REFLEXUM</i> Hall.....	473
5. Ventral view of a small specimen.	
6. Upper view of a larger specimen.	
Oriskany formation, Ridgely member, Cumberland. (After	
Hall.)	



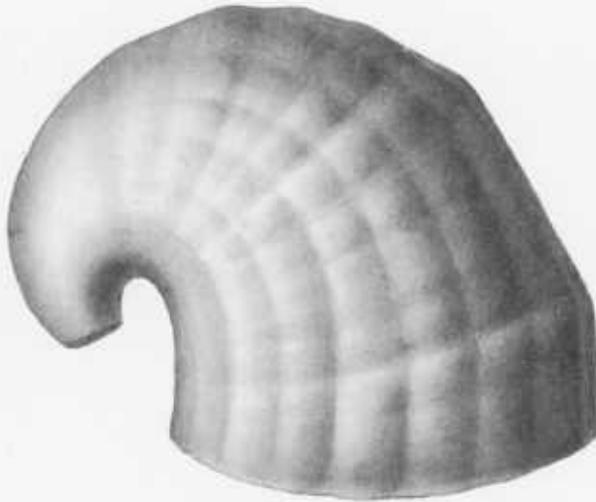
2



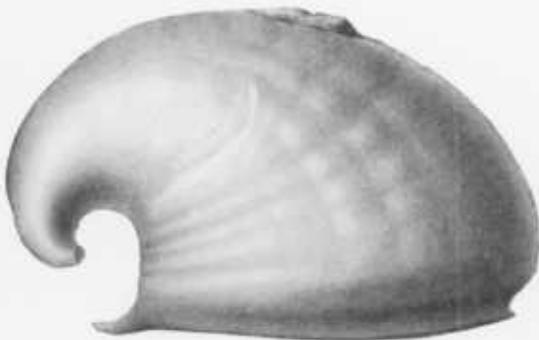
6



5



1



3

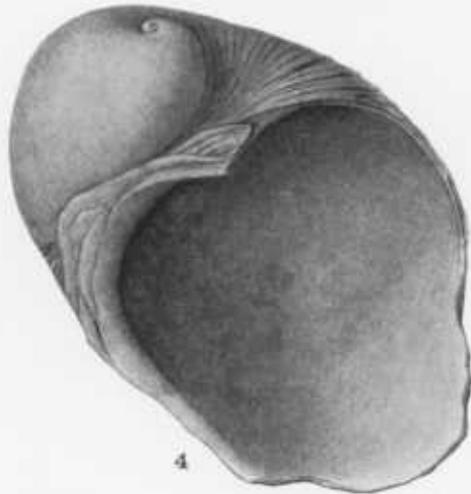


4

MOLLUSCA—GASTROPODA

PLATE LXXXIV

	PAGE
Figs. 1, 2. <i>PLATYCERAS REFLEXUM</i> Hall.....	473
Two views of a specimen in which the aperture is obtusely quad- rangular. Oriskany formation, Ridgely member, Cumberland. (After Hall.)	
Figs. 3, 4. <i>PLATYCERAS ? CALLOSUM</i> Hall.....	474
Dorsal and ventral views. Oriskany formation, Ridgely member, Cumberland. (After Hall.)	
Figs. 5, 6. <i>PLATYCERAS SINUATUM</i> Hall ?.....	474
5. Upper view of a small specimen, showing the deep marginal sinuosity and the strong wrinkled surface.	
6. Upper view of a larger specimen. New Scotland formation, New York.	
Figs. 7, 8. <i>PLATYCERAS TRILOBATUM</i> Hall.....	475
Ventral and upper views. [The striæ represented between the aper- ture and the next volution do not exist in the specimen.] New Scotland formation, New York.	



MOLLUSCA—GASTROPODA

PLATE LXXXV

	PAGE
Figs. 1, 2. <i>PLATYCERAS TENUILIRATUM</i> Hall.....	476
Upper and dorsal views of a large individual. New Scotland formation, New York.	
Fig. 3. <i>PLATYCERAS ANGULARE</i> Rowe n. sp.....	476
Dorsal view of type. Oriskany formation, Ridgely member, Warren Point, Penna.	
Figs. 4-6. <i>PLATYCERAS MULTISINUATUM</i> Hall.....	477
4, 5. Upper and dorsal views of a small specimen.	
6. Upper view of a partially exfoliated specimen.	
New Scotland formation, New York.	
Fig. 7. <i>PLATYCERAS PLATYSTOMUM</i> Hall.....	477
View of the right side of a specimen, the apex of which is broken off. New Scotland formation, New York.	
Figs. 8, 9. <i>PLATYCERAS SPIRALE</i> Hall.....	478
Views of internal cast. Helderberg formation, New Scotland member, Corriganville.	
Figs. 10-13. <i>PLATYCERAS GRACILE</i> Ohern n. sp.....	478
10, 12. Two views of individual without plications.	
11, 13. Views of strongly plicate specimen.	
Oriskany formation, Ridgely member, Cumberland.	



6



1



4



3



8



9



2



5



7



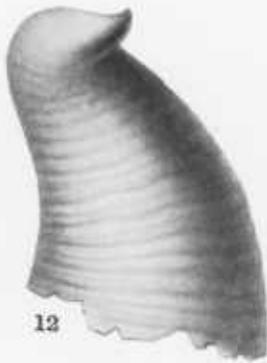
13



10



11



12

MOLLUSCA—GASTROPODA

PLATE LXXXVI

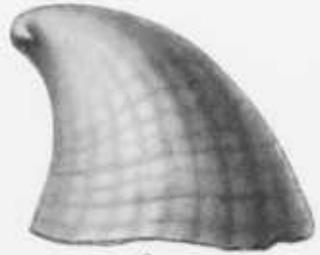
	PAGE
Figs. 1-3. <i>PLATYCERAS SUBCONICUM</i> Ohern n. sp.....	479
1, 2. Views of type.	
3. Individual with low folds.	
Oriskany formation, Ridgely member, Cumberland.	
Fig. 4. <i>PLATYCERAS NEWBERRYI</i> Hall.....	479
Side view. Oriskany formation, Ridgely member, Warren Point, Penna.	
Figs. 5-7. <i>STROPHOSTYLUS TRANSVERSUS</i> Hall.....	480
Upper, ventral, and oblique views. Oriskany formation, Ridgely member, Cumberland. (After Hall.)	
Figs. 8, 9. <i>STROPHOSTYLUS MATHERI</i> Hall.....	481
Dorsal and ventral views. Oriskany formation, Ridgely member, Cumberland. (After Hall.)	
Fig. 10. <i>STROPHOSTYLUS ANDREWSI</i> Hall.....	481
Ventral view. Oriskany formation, Ridgely member, Cumberland. (After Hall.)	
Figs. 11, 12. <i>DIAPHOROSTOMA DEPRESSUM</i> (Hall).....	482
Lower and dorsal views. New Scotland formation, New York.	
Figs. 13, 14. <i>DIAPHOROSTOMA DESMATUM</i> Clarke.....	483
Upper and ventral views. Oriskany formation, New York.	



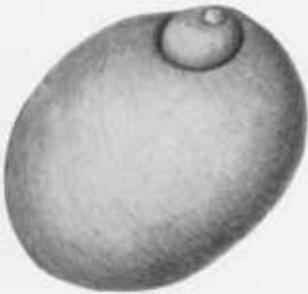
1



2



3



5



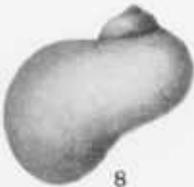
4



7



11



8



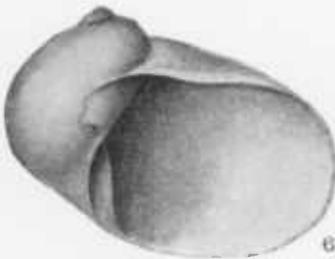
13



14



10



6



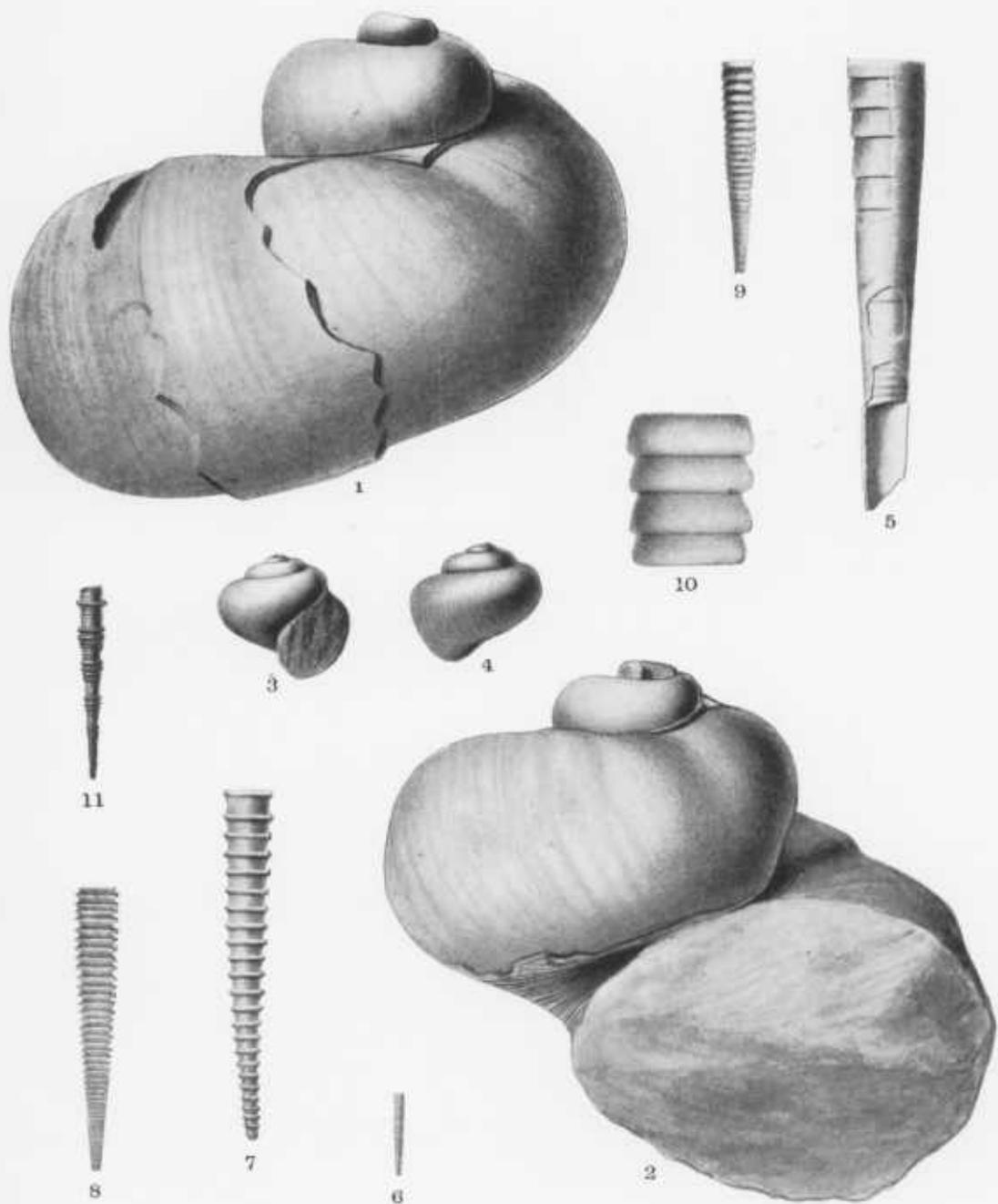
9



12

PLATE LXXXVII

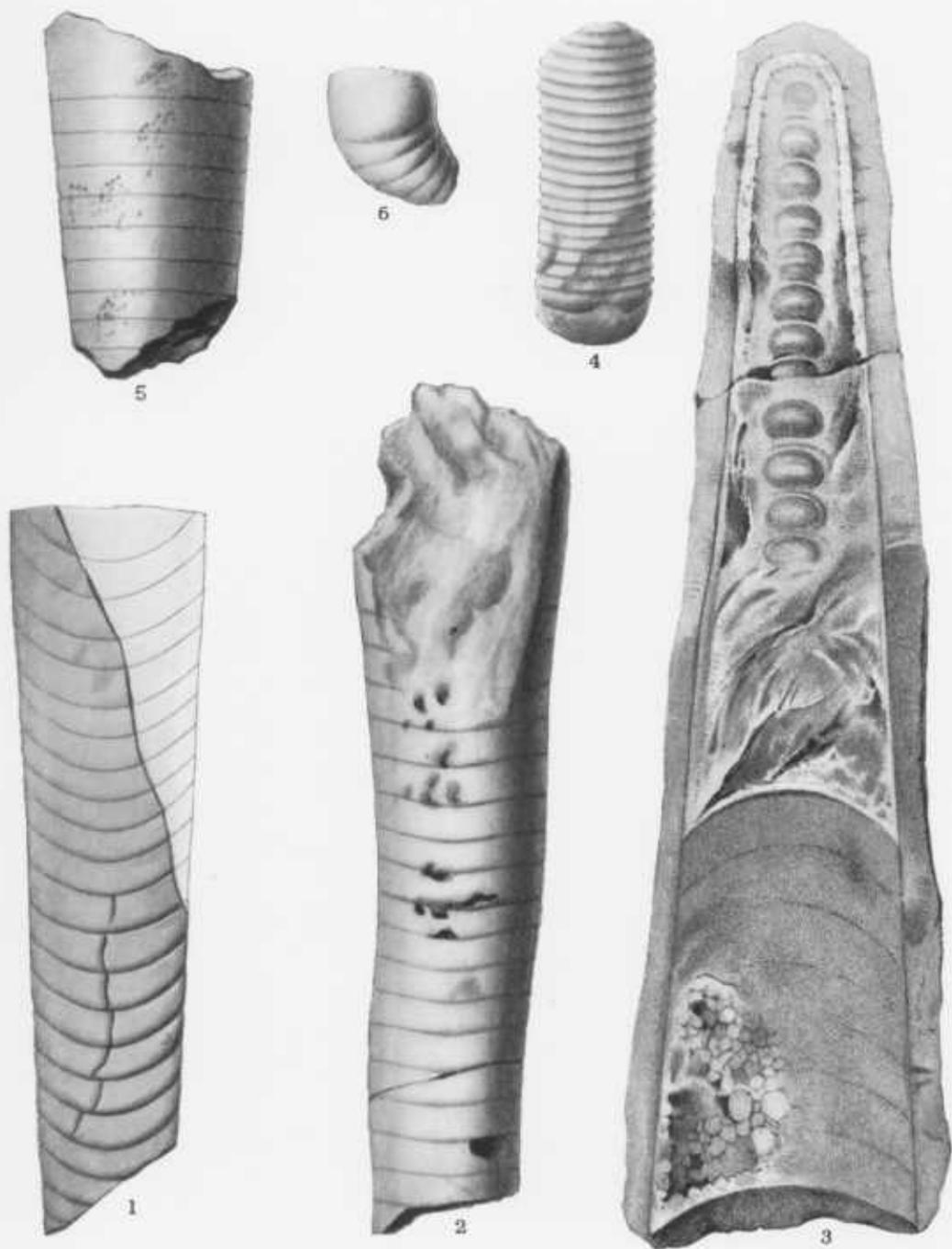
	PAGE
Figs. 1, 2. <i>DIAPHOROSTOMA VENTRICOSUM</i> (Conrad).....	482
Dorsal and ventral views of a large individual. Oriskany formation, Ridgely member, Cumberland.	
Figs. 3, 4. <i>PLATYSTOMA NIAGARENSE</i> Hall.....	483
Ventral and dorsal views. Helderberg formation, Keyser member, Keyser, W. Va.	
Fig. 5. <i>TENTACULITES ? ACUS</i> Clarke.....	484
Partially exfoliated specimen. Oriskany formation, New York.	
Figs. 6, 7. <i>TENTACULITES ACULUS</i> Hall.....	485
6. Specimen from the Helderberg formation, New York.	
7. Same. $\times 5$ .	
Figs. 8-10. <i>TENTACULITES ELONGATUS</i> Hall.....	485
8. An individual of medium size.	
9. An exfoliated individual.	
10. A portion of the same enlarged, showing the appearance of the annu- lations. $\times 4$ .	
New Scotland formation, New York.	
Fig. 11. <i>TENTACULITES GYRACANTHUS</i> (Eaton).....	486
A shell. $\times 5$ . Helderberg formation, Keyser member, Keyser, W. Va.	



MOLLUSCA—GASTROPODA

PLATE LXXXVIII

	PAGE
Figs. 1-3. <i>ORTHO CERAS LONGICAMERATUM</i> Hall.....	487
1. Longitudinal section showing curvature of septa.	
2. Internal cast, doubtfully referred to this species. Helderberg formation, Cumberland.	
3. A longitudinal section of a specimen, the septa being proportionally a little more distant. Coeymans formation, New York.	
Fig. 4. <i>ORTHO CERAS SCHUCHERTI</i> Maynard n. sp.....	487
Internal cast. Helderberg formation, Keyser member, Cumberland.	
Fig. 5. <i>ORTHO CERAS RIGIDUM</i> Hall ?.....	488
Fragment preserving surface ornamentation. Helderberg formation, Keyser member, Devil's Backbone.	
Fig. 6. <i>CYRTO CERAS ? DUBIUM</i> Swartz n. sp.....	488
Internal cast of type. Helderberg formation, Coeymans member, Devil's Backbone.	



MOLLUSCA—CEPHALOPODA

PLATE LXXXIX

	PAGE
Fig. 1. <i>PROËTUS PACHYDERMATUS</i> Barrett.....	489
Portion of cephalon preserving glabella. × 2. Helderberg formation, Keyser member, Cumberland.	
Figs. 2-4. <i>PROËTUS</i> cf. <i>PROTUBERANS</i> Hall.....	490
2. Cephalon.	
3. The pygidium of another individual.	
4. Profile of the same. Coeymans formation, New York.	
Figs. 5, 6. <i>CORDANIA CYCLURUS</i> Hall and Clarke.....	491
5. Fragment of cephalon showing lateral furrows of the glabella a little too strongly. × 3.	
6. Pygidium showing ornamentation. × 3. New Scotland formation, New York.	
Figs. 7, 8. <i>CYATHASPIS AUSTRALIS</i> Ohern n. sp.....	492
Two views of the type. × 3. Helderberg formation, Cumberland.	
Fig. 9. <i>CALYMENE CAMERATA</i> Conrad.....	494
Pygidium, exfoliated. Helderberg formation, Keyser member, Pinto.	
Figs. 10-12. <i>HOMALONOTUS SWARTZI</i> Ohern n. sp.....	495
10, 11. Detached pleuræ.	
12. Glabella. Oriskany formation, Ridgely member, Millers Spring near Cumberland.	
Figs. 13-15. <i>HOMALONOTUS VANUXEMI</i> Hall.....	496
13, 14. Views of pygidium.	
15. Nearly complete cephalon. Oriskany formation, Ridgely member, Franklin, W. Va.	

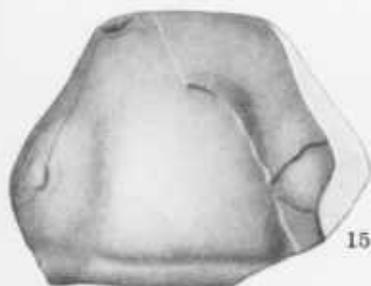
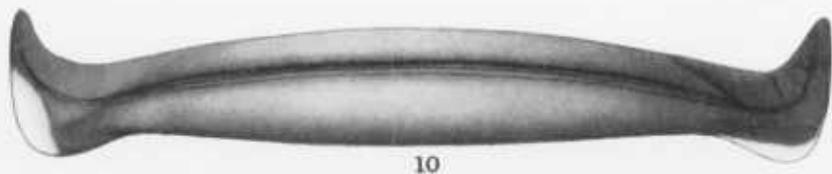
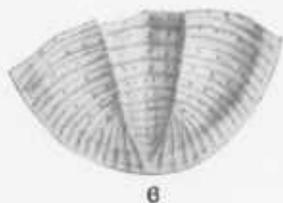
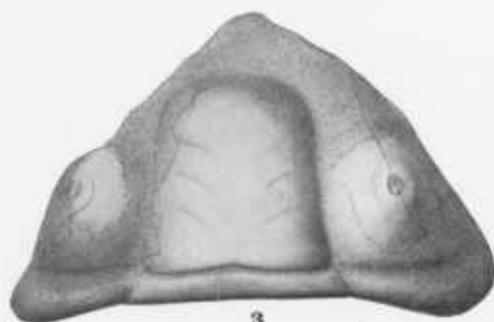


PLATE XC

	PAGE
Figs. 1, 2. HOMALONOTUS SWARTZI Ohern n. sp.....	495
Pygidium of type. Oriskany formation, Ridgely member, Berkeley Springs, W. Va.	
Fig. 3. HOMALONOTUS VANUXEMI Hall.....	496
Complete cephalon. Oriskany formation, Ridgely member, Franklin, W. Va.	



3



1

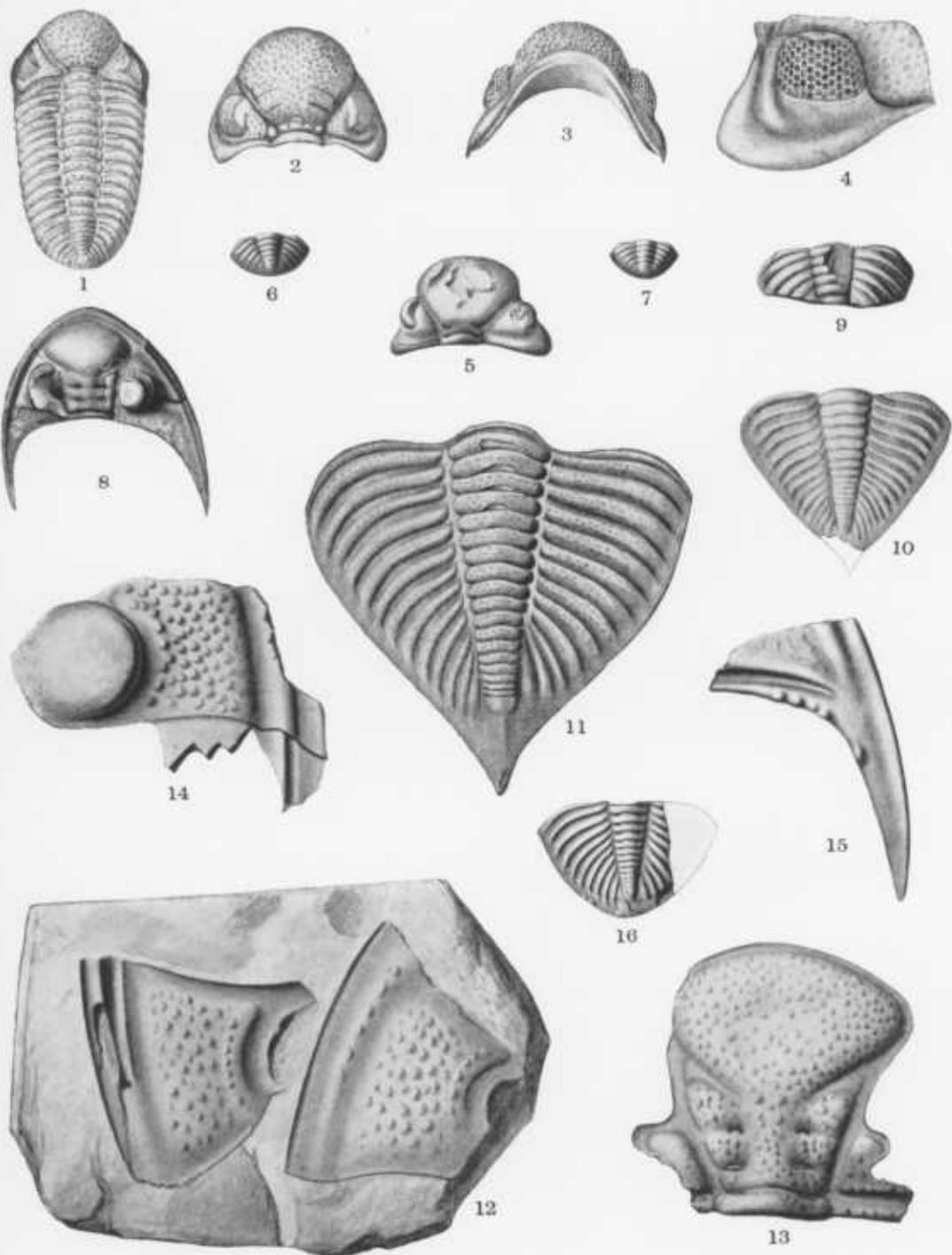


2

ARTHIPODA—TRILOBITA

PLATE XCI

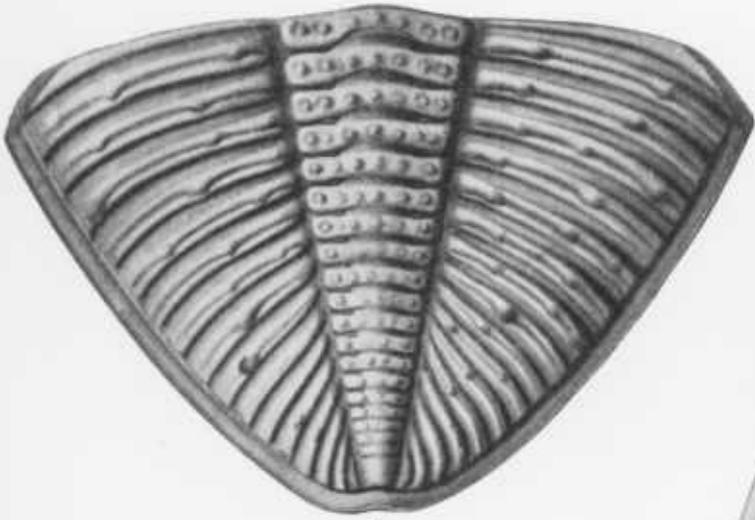
	PAGE
Figs. 1-4. PHACOPS LOGANI Hall.....	497
1. An entire specimen which has the head compressed from above, and the eyes slightly distorted.	
2. The head of a larger individual which shows the transverse furrows, and preserves the eyes in their proper form.	
3. View of the lower side of the head of another specimen, showing some crenulations along the marginal furrow.	
4. The eye enlarged.	
New Scotland formation, New York.	
Figs. 5-7. PHACOPS ? sp.....	498
5. Cephalon exfoliated.	
6, 7. Pygidia.	
Oriskany formation, Ridgely member, Cumberland.	
Figs. 8, 9. DALMANITES KEYSERENSIS Swartz n. sp.....	499
8. Cephalon of the type.	
9. Part of a pygidium probably belonging to the same species.	
Helderberg formation, Keyser member, Tonoloway.	
Figs. 10-11. DALMANITES MICRURUS (Green).....	507
10. A small pygidium.	
11. A larger pygidium from which the test has been removed, leaving the cast punctate.	
New Scotland formation, New York.	
Figs. 12-15. DALMANITES MULTIANNULATUS Ohern n. sp.....	500
12. Fragments of cheeks.	
13. Glabella.	
14. Eye and part of cheek.	
15. Genal angle.	
Oriskany formation, Knobly Mountain, near Cumberland.	
Fig. 16. DALMANITES ASPINOSUS Weller.....	499
Exfoliated pygidium. Helderberg formation, Keyser member, Cash Valley.	



ARTHROPODA—TRILOBITA

PLATE XCII

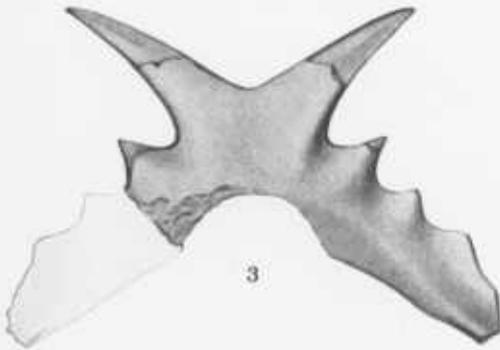
	PAGE
Figs. 1-4. <i>DALMANITES MULTIANNULATUS</i> Ohern n. sp.....	500
1. Exfoliated pygidium showing ornamentation imperfectly.	
2. Exfoliated pygidium which does not show the tubercular surface.	
3. Hypostoma showing the bifurcating frontal process.	
4. Genal angle.	
Oriskany formation, Ridgely member, Knobly Mountain near Cumberland.	



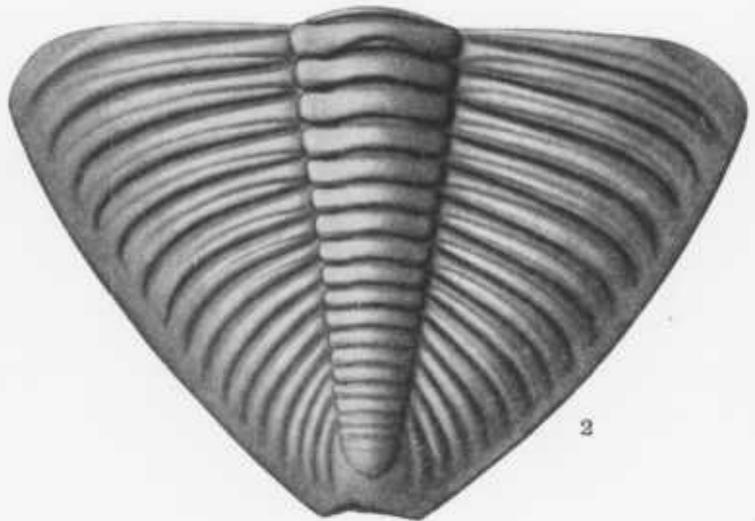
1



4



3



2

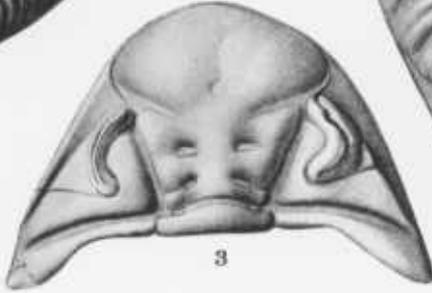
ARTHROPODA—TRILOBITA

PLATE XCIII

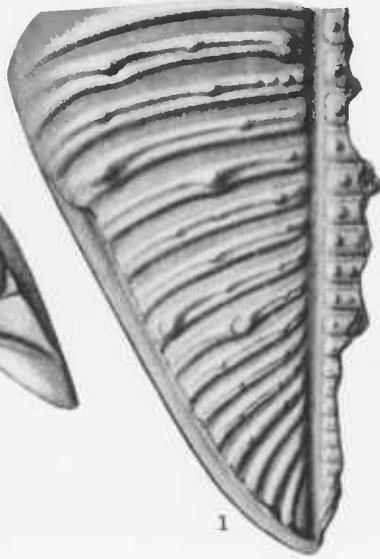
	PAGE
Fig. 1. DALMANITES MULTIANNULATUS Ohern n. sp. ....	500
Fragment of an exfoliated pygidium. Oriskany formation, Ridgely member, Knobly Mountain, near Cumberland.	
Fig. 2. DALMANITES LATUS Ohern n. sp. ....	502
Imperfect pygidium of type. Oriskany formation, Ridgely member, Cumberland.	
Fig. 3. DALMANITES (SYNPHORIA) STEMMATUS Clarke .....	503
Exfoliated cephalon. Oriskany formation, Ridgely member, Cumberland.	
Fig. 4. DALMANITES (CORYCEPHALUS) DENTATUS Barrett ? .....	505
Pygidium. Oriskany formation, Ridgely member, Evick Gap opposite Frankiin, W. Va.	
Fig. 5. DALMANITES (CHASMOPS) ANCHIIOPS (Green) .....	508
Pygidium. Oriskany formation, Ridgely member.	
Figs. 6-10. DALMANITES (HAUSMANNIA) PLEUROPTYX (Green) .....	510
6. Imperfect pygidium. Heiderberg formation, New Scotland member, Devil's Backbone.	
7. Young specimen enlarged showing the characteristic features of species.	
8. Profile of the head, showing the form and elevation of the eye.	
9. Exfoliated glabella, genal angles restored.	
10. A large exfoliated pygidium.	
New Scotland formation, New York.	



2



3



1



4



5



6



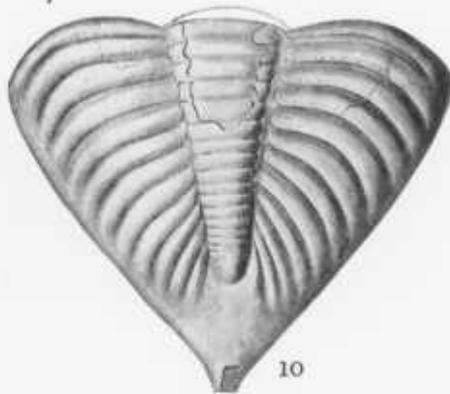
7



8



9



10

PLATE XCIV

	PAGE
Fig. 1. DALMANITES BERKELEYENSIS Swartz n. sp.....	512
Pygidium of type specimen. Oriskany formation, Ridgely member, 3 miles north of Berkeley Springs, W. Va.	

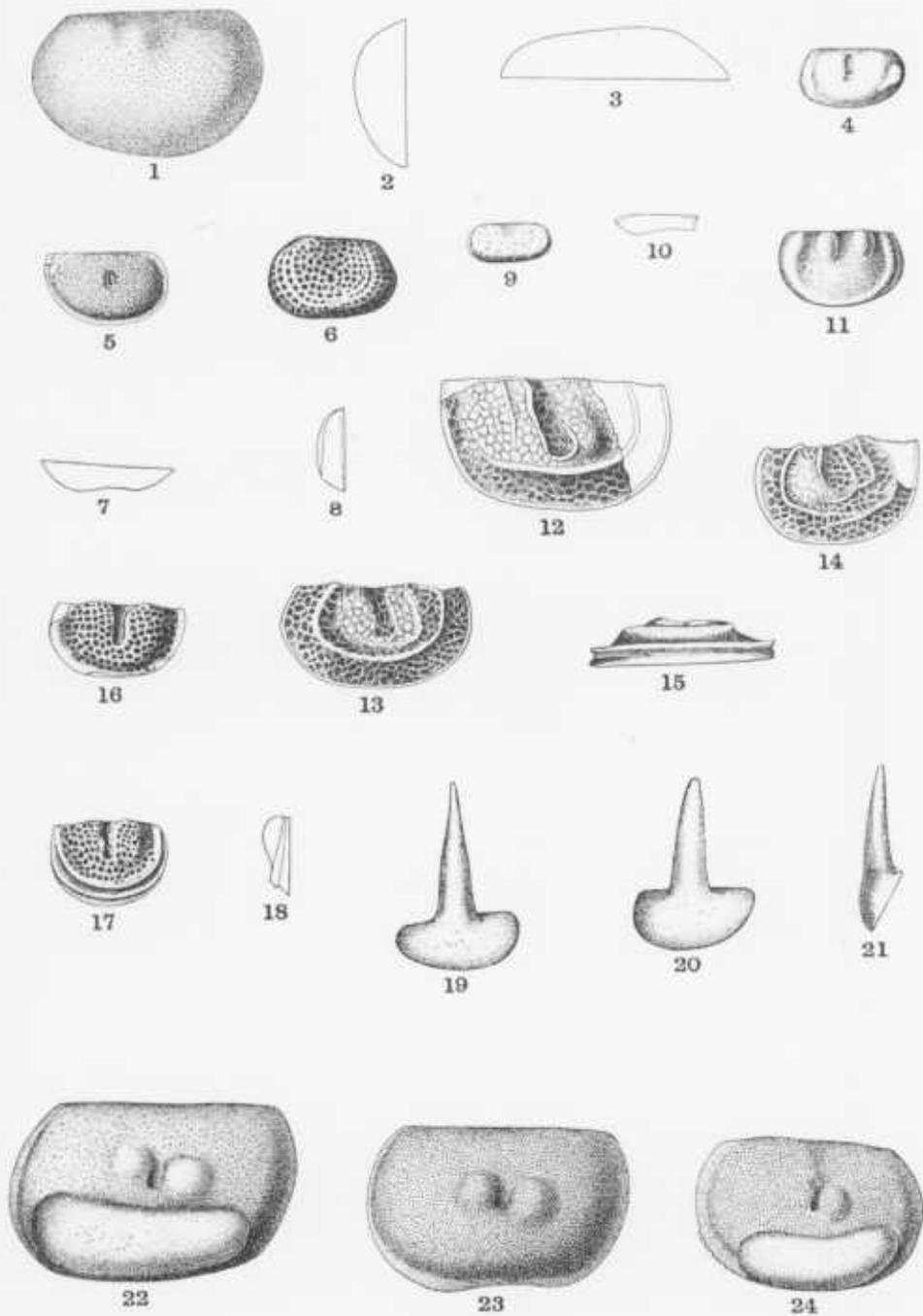


1

ARTHROPODA—TRILOBITA

PLATE XCV

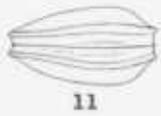
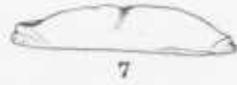
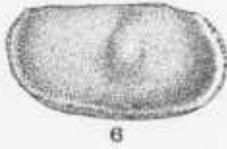
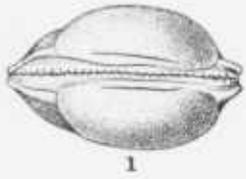
	PAGE
Figs. 1-3. <i>APARCHITES GORDONI</i> Ulrich and Bassler n. sp.....	515
1. Lateral view of left valve. × 20.	
2, 3. Longitudinal and vertical sections of same. × 20.	
Helderberg formation, Keyser member, Cumberland.	
Fig. 4. <i>PRIMITIA POSTTURGIDA</i> Ulrich and Bassler n. sp.....	515
The unique right valve on which this species is founded, showing the flattened anterior spine and the posterior marginal swelling. × 20. Oriskany formation, 21st Bridge.	
Fig. 5. <i>PRIMITIA ? CUMBERLANDICA</i> Ulrich and Bassler n. sp.....	516
A left valve showing the subcentral pit, strongly reticulated surface and elevated rim. × 20. Helderberg formation, Keyser member, Cumberland.	
Figs. 6-8. <i>PRIMITIA ? CONCENTRICA</i> Ulrich and Bassler n. sp.....	517
Lateral, dorsal, and anterior views of a right valve. × 20. Oriskany formation, 21st Bridge.	
Figs. 9, 10. <i>PRIMITIELLA VARIOLATA</i> Ulrich and Bassler n. sp.....	518
Lateral and dorsal edge views of a right valve. × 20. Oriskany formation, 21st Bridge.	
Fig. 11. <i>ULRICHIA ÆQUALIS</i> Ulrich and Bassler n. sp.....	518
Right valve showing the usual form and obscure surface reticulation. × 20. Oriskany formation, 21st Bridge.	
Figs. 12-15. <i>STREPULA IRREGULARIS</i> Jones and Holl.....	519
12. An incomplete large left valve. × 20.	
13, 14. Two right valves of the average size showing differences in the surface ornament and outline. × 20.	
15. Ventral edge view of original of fig. 13. × 20.	
Fig. 16. <i>HALLIELLA ? SEMINULUM</i> var. <i>LONGA</i> Ulrich and Bassler n. var...	520
A right valve slightly injured along the margin. × 20. Helderberg formation, Keyser member, Cumberland.	
Figs. 17, 18. <i>HALLIELLA ? TRIPPLICATA</i> Ulrich and Bassler n. sp.....	521
17. Right valve. × 20.	
18. End view of same. × 20.	
Helderberg formation, Keyser member, Cumberland.	
Figs. 19-21. <i>ÆCHMINA CUSPIDATA</i> Jones and Holl.....	521
19. Left valve showing the extraordinary development of the spine. × 20.	
20, 21. Lateral and anterior end views of a right valve. The variation shown in outline of body of valve is probably due to accident. × 20.	
Helderberg formation, New Scotland member, 21st Bridge.	
Figs. 22-24. <i>MESOPHALUS HARTLEYI</i> Ulrich and Bassler n. gen. and sp...	523
22. Lateral view of right valve showing the ventral swelling. × 20.	
23. An average right valve without the ventral pouch. × 20.	
24. Left valve of a rather small complete carapace. × 20.	
Helderberg formation, Keyser member, Cumberland.	



ARTHIPODA—OSTRACODA

PLATE XCVI

	PAGE
Figs. 1-3. <i>MESOMPHALUS HARTLEYI</i> Ulrich and Bassler n. gen. and sp.....	523
1, 2. Ventral and posterior end views of a female individual. × 20.	
3. Highly magnified view of the surface of original of fig. 24, pl. xciv.	
Figs. 4, 5. <i>MESOMPHALUS SUBMARGINATA</i> Ulrich and Bassler n. sp.....	523
Lateral and ventral edge views of the type specimen. × 20. Helderberg formation, Keyser member, Cumberland.	
Figs. 6-9. <i>CTENOBOLBINA ? DENTICULATA</i> Ulrich and Bassler n. sp.....	524
6. Lateral view of one of the type specimens, a left valve with a portion of the flange broken away and the surface simply granulose. × 20.	
7. Dorsal edge view of the same specimen. × 20.	
8. A right valve showing pits between the granules of the surface. × 20.	
9. Ventral edge view of same. × 20. Helderberg formation, Keyser member, Cumberland.	
Figs. 10-12. <i>CTENOBOLBINA ? DUBIA</i> Ulrich and Bassler n. sp.....	525
10. Left side of complete carapace. × 20.	
11, 12. Ventral and posterior edge view of same. × 20. Helderberg formation, Keyser member, Cumberland.	
Figs. 13-15. <i>BOLLIA AMERICANA</i> Ulrich and Bassler n. sp.....	525
Lateral, ventral and posterior views of a left valve. × 20. Oriskany formation, 21st Bridge.	
Figs. 16, 17. <i>BOLLIA CURTA</i> Ulrich and Bassler n. sp.....	526
Side and ventral views of a left valve of this well-marked species. × 20. Oriskany formation 21st Bridge.	
Fig. 18. <i>BOLLIA IRREGULARIS</i> Ulrich and Bassler n. sp.....	527
Lateral view of right valve. × 20. Helderberg formation, New Scotland member, 21st Bridge.	
Fig. 19. <i>BOLLIA JUGALIS</i> Ulrich and Bassler n. sp.....	527
A left valve showing the ventral coalescence of the median and marginal ridges. × 20. Oriskany formation, 21st Bridge.	
Figs. 20-22. <i>BOLLIA UNGULA</i> Jones.....	528
Lateral, ventral and posterior views of a left valve. × 20. Oriskany formation, 21st Bridge.	



ARTHROPODA—OSTRACODA

PLATE XCVII<sup>1</sup>

	PAGE
Figs. 1-4. <i>KLÆDENIA CENTRICORNIS</i> Ulrich and Bassler.....	529
1. Lateral view of left valve (female individual) broken anteriorly. × 20.	
2. Left valve of a complete carapace. × 20.	
3, 4. Posterior and ventral views of same specimen. × 20.	
Figs. 5-7. <i>KLÆDENIA FIMBRIATA</i> Ulrich and Bassler.....	529
5. Lateral view of a perfect left valve. × 20.	
6, 7. Ventral and end views of same specimen. × 20. Coeymans formation, Herkimer County, New York.	
Figs. 8, 9. <i>LEPERDITIA ALTOIDES</i> Weller.....	513
8. Left valve. × 2½.	
9. Right valve. × 2½. Decker Ferry formation, Flatbrookville, New Jersey.	
Fig. 10. <i>LEPERDITIA GIOANTEA</i> Weller.....	514
A left valve, natural size. Rondout formation, Nearpass Quarry, New Jersey.	
Fig. 11. <i>LEPERDITIA ELONGATA</i> Weller.....	514
A right valve. × 2. Rondout formation, Nearpass Quarry, New Jersey.	
Figs. 12, 13. <i>KLÆDENIA NEARPASSI</i> (Weller).....	530
Left and right valves. × 6. Decker Ferry formation, Nearpass Quarry, New Jersey.	
Figs. 14, 15. <i>KLÆDENIA SUSSEXENSIS</i> (Weller).....	532
Two left valves showing slight variations. × 4 and × 6. Decker Ferry formation, Nearpass Quarry, New Jersey.	
Fig. 16. <i>KLÆDENIA KÜMMELI</i> (Weller).....	531
A left valve. × 3. Rondout formation, Nearpass Quarry, New Jersey.	
Fig. 17. <i>KLÆDENIA BARRETTI</i> (Weller).....	532
A right valve. × 5. Decker Ferry formation, Nearpass Quarry, New Jersey.	
Figs. 18-20. <i>KLÆDENELLA PENNSYLVANICA</i> (Jones).....	533
Left side, end and ventral views of a complete carapace. × 15. Helderberg formation, Pennsylvania.	
Fig. 21. <i>KLÆDENELLA CLARKEI</i> (Jones).....	533
Right valve. × 20. Helderberg formation, Herkimer County, New York.	

<sup>1</sup> Figs. 8-17 (after Weller), Figs. 18-21 (after Jones).

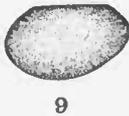
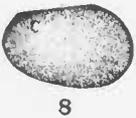
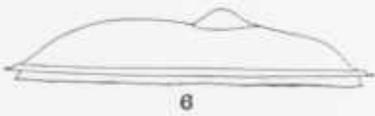
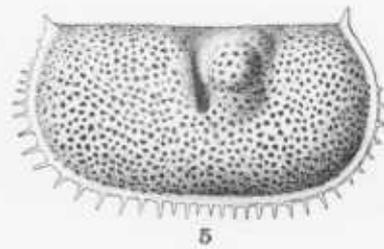
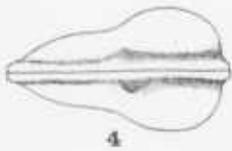
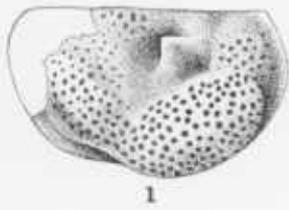
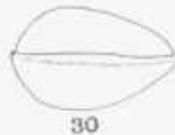
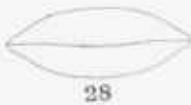
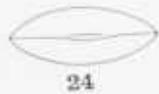
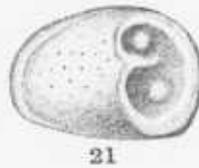
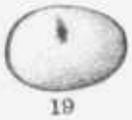
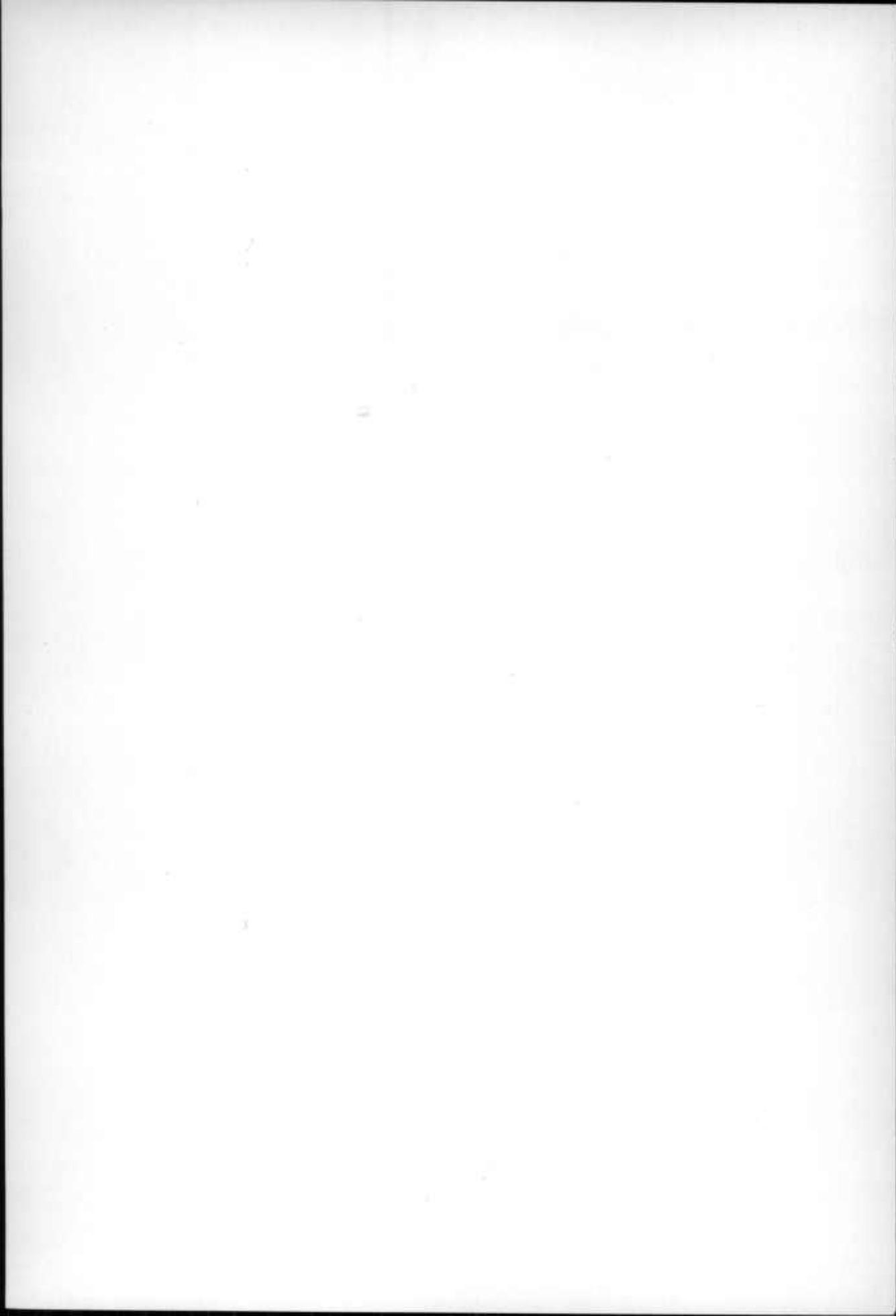


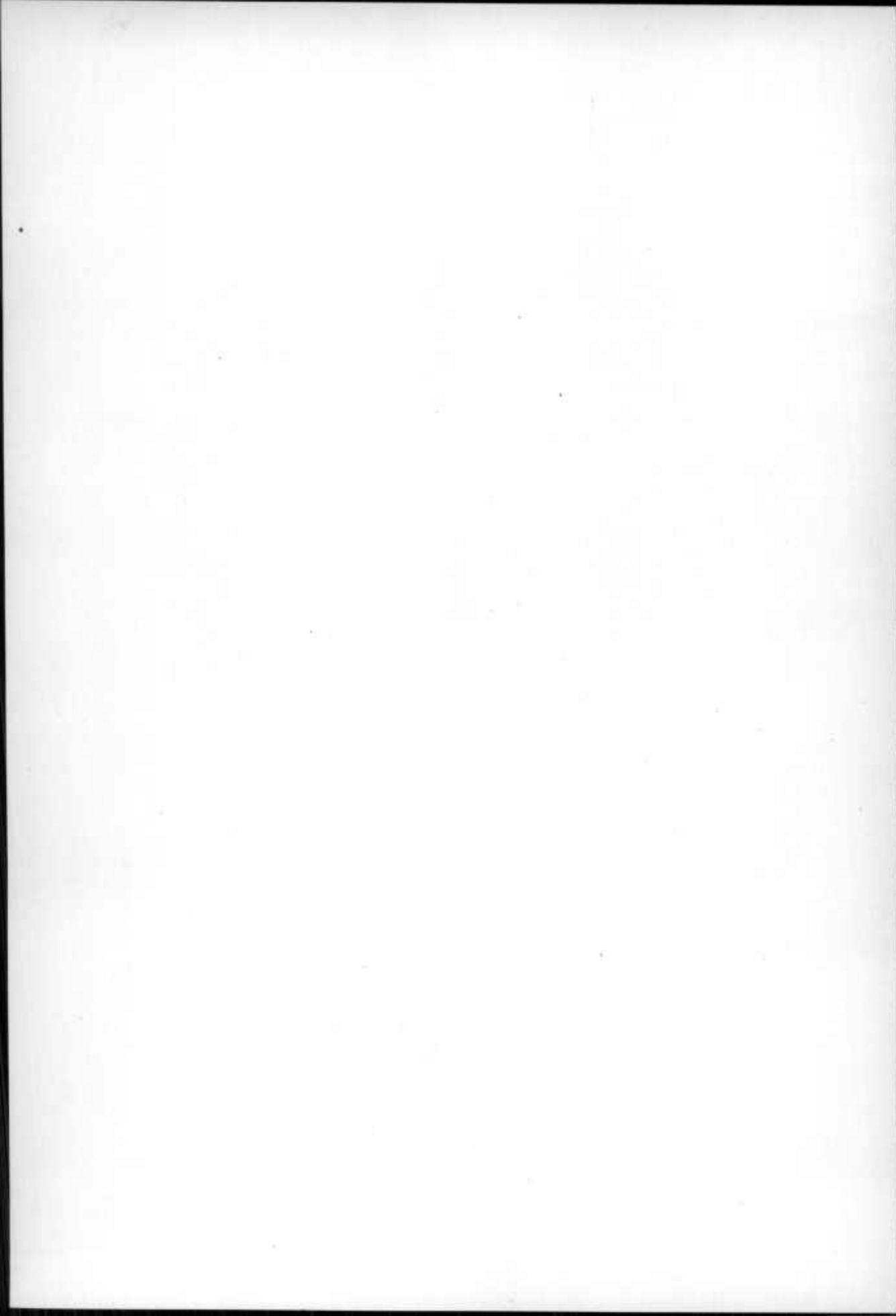
PLATE XCVIII

	PAGE
Figs. 1-3. <i>KLEDENELLA CLARKEI</i> VAR. <i>PAUPERA</i> Ulrich and Bassler.....	534
1. Left side of complete carapace showing the emaciated appearance and the granules in some of the furrows.	
2, 3. Ventral and anterior end views of same. Helderberg formation, Keyser member, Cumberland.	
Figs. 4-6. <i>KLEDENELLA TURGIDA</i> Ulrich and Bassler.....	535
4. Right valve of an unusually short specimen. × 20.	
5, 6. Left and right valves of an average specimen. × 20. Helderberg formation, Keyser member, Cumberland.	
Fig. 7. <i>KLEDENELLA TURGIDA</i> VAR. <i>VENTROSA</i> Ulrich and Bassler.....	535
Left valve of a complete carapace. × 20. Helderberg formation, Keyser member, Cumberland.	
Fig. 8. <i>THLIPSURA MULTIPUNCTATA</i> Ulrich and Bassler n. sp.....	536
Lateral view of right valve. × 20. Oriskany formation, 21st Bridge.	
Figs. 9-11. <i>OCTONARIA ? ANGULATA</i> Ulrich and Bassier n. sp.....	537
Two right and a left valve showing slight variations in outline and markings. × 20. Helderberg formation, Keyser member, Cum- berland.	
Figs. 12-18. <i>OCTONARIA INÆQUALIS</i> Ulrich and Bassler n. sp.....	538
12-14. Left side and posterior and ventral views of a complete carapace. × 20.	
15. Right side of another specimen more elongate than usual, showing the relatively small size and different pitting of the right valve as compared with the left valve. × 20.	
16. Left valve of a somewhat shorter form in which the two lower pits are confluent. × 20.	
17, 18. Longitudinal and ventral sections of same. × 20. Helderberg formation, Keyser member, Cumberland.	
Fig. 19. <i>OCTONARIA SIMPLEX</i> (Krause).....	538
Left valve. × 20. Helderberg formation, Keyser member, Cumber- land.	
Fig. 20. <i>CRATERELLINA OBLONOA</i> Ulrich and Bassler n. sp.....	540
Right valve showing the crater-like anterior pit and the somewhat irregular shape pertaining to this species. × 20. Oriskany formation, 21st Bridge.	
Fig. 21. <i>CRATERELLINA ROBUSTA</i> Ulrich and Bassler n. sp.....	539
A characteristic right valve of this large and well marked species. × 20. Oriskany formation, 21st Bridge.	
Fig. 22. <i>BYTHOCYPRIS PUNCTULATA</i> VAR. <i>ARCTATUM</i> Ulrich and Bassler n. var. ....	540
Lateral view of left valve. × 20. Helderberg formation, Keyser member, Cumberland.	
Figs. 23-25. <i>PONTOCYPRIS ARCUATA</i> Ulrich and Bassier n. sp.....	541
23. Right side of a complete carapace. × 20.	
24, 25. Dorsal outline and posterior end view of same specimen. × 20. Helderberg formation, Keyser member, Cumberland.	
Figs. 26-28. <i>PONTOCYPRIS MAWII</i> VAR. <i>BREVIATA</i> Jones.....	541
26. Left valve. × 20.	
27. Outline from the dorsal side. × 20.	
28. Anterior outline view, showing dorsal overlap of the right valve and ventral overlap of the left. Helderberg formation, Keyser member, Cumberland.	
Figs. 29-31. <i>PACHYDOMELLA LONGULA</i> Ulrich and Bassier n. sp.....	542
29. Right valve. × 20.	
30, 31. Ventral and posterior end views of same. × 20. Helderberg formation, Keyser member, Cumberland.	





DEVONIAN  
MIDDLE



## NOTE

Plates I to VI, illustrating the Geological and Paleontological Relations of the Middle and Upper Devonian, are bound with the text volume. The following plates (Plates VII to XLIV) illustrate the Systematic Paleontology of the Middle Devonian of Maryland.

PLATE VII

	PAGE
Fig. 1. STEREOLASMA RECTUM (Hall).....	119
Upright view of corallum. $\times 1\frac{1}{2}$ . Romney formation, Hamilton member, Ernstville.	
Fig. 2. CF. AMPLEXUS HAMILTONIÆ Hall.....	120
Upright view of corallum. Romney formation, Hamilton member, Evitts Creek.	
Fig. 3. HELIOPHYLLUM sp. ....	121
Upright view of part of corallum, epitheca partly exfoliated showing the septa. $\times 1\frac{1}{4}$ . Romney formation, Hamilton member, Ernstville.	
Figs. 4, 5. CYSTIPHYLLUM AMERICANUM Milne-Edwards and Haime (?)..	121
4. Upright view of corallum.	
5. Transverse section of the same. Romney formation, Hamilton member, Evitts Creek.	
Fig. 6. POLYGNATHUS sp. undet.....	122
Incomplete jaw. The tips of four or five teeth which were discernible on the specimen are not brought out in the illustration. Tonoloway. (After Kindle.) Romney formation, Onondaga member.	
Figs. 7-9. RHOPALONARIA TENUIS Ulrich and Bassler.....	123
7, 8. Two small portions of the zoarium which on account of the frequent crossing of the branches do not show the characteristic pinnate arrangement of the rows of cells. $\times 9$ . Romney formation, Hamilton member, Evitts Creek.	
9. View of one of the type specimens of this species. (After Ulrich and Bassler.) Thedford, Ont. $\times 9$ .	
Figs. 10-12. MONTICULIPORA (?) MARYLANDENSIS Ulrich and Bassler n. sp. .	123
10. Vertical section, showing tabulation. $\times 20$ .	
11. Tangential section. $\times 20$ .	
12. Several zorecia of same, to show structure of walls and acanthopores. $\times 35$ . Romney formation, Hamilton member, Evitts Creek.	



1



4



2



3



6



5



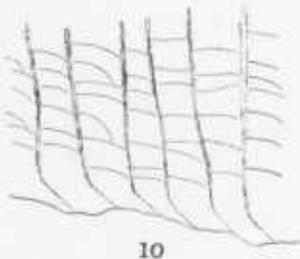
7



9



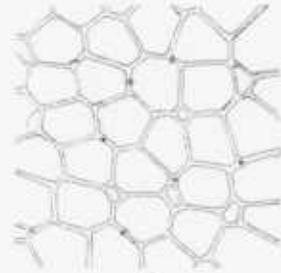
8



10



12



11

PLATE VIII

	PAGE
Figs. 1-4. <i>LINGULELLA</i> (?) <i>PALIFORMIS</i> Hall.....	124
1. Interior of dorsal valve (?). Evitts Creek.	
2. Ventral valve, showing faintly the pedicle-groove. Evitts Creek. × 1½.	
3. A partly exfoliated valve. Evitts Creek. × 1½.	
4. Ventral valve, the specimen showing the pedicle-groove. Williams Road, 3½ miles southeast of Cumberland. × 2. Romney formation, Hamilton member.	
Fig. 5. <i>LINGULA DELIA</i> Hall (?).....	125
Ventral valve (?) showing strong median septum. × 1½. Romney formation, Hamilton member, Evitts Creek.	
Fig. 6. <i>LINGULA LIGEA</i> Hall (?).....	126
Interior of partly exfoliated valve. × 2½. Romney formation, Hamilton member, 21st Bridge.	
Figs. 7, 8. <i>LINGULA</i> <i>CF.</i> <i>NUDA</i> Hall.....	127
7. Partly exfoliated distorted valve. × 2½. Romney formation, Onon- daga member, Williams Road, 3½ miles southeast of Cumber- land.	
8. Partly exfoliated ventral valve (?). × 1½. Romney formation, Hamilton member, Oldtown Road, east of Cumberland.	
Figs. 9, 10. <i>LINGULA NUDA</i> Hall.....	127
Separate valves showing the usual variety of form in this species. Hamilton formation, New York.	
Fig. 11. <i>LINGULA</i> <i>CF.</i> <i>COMPTA</i> Hall and Clarke.....	128
View of crushed and broken specimen. × 1¼. Romney formation, Hamilton member, Evitts Creek.	
Figs. 12, 13. <i>LINGULA CLARKI</i> n. sp.....	128
Partly exfoliated valves showing strong median convexity. × 3. Rom- ney formation, Hamilton member, 21st Bridge.	
Figs. 14-17. <i>ORBICULOIDEA LODIENSIS</i> <i>VAR. MEDIA</i> (Hall).....	129
14. Interior of dorsal valve. × 2.	
15. Exterior ventral valve showing the pedicle-groove. × 2. Romney formation, Hamilton member, Evitts Creek.	
16. Interior of a partly exfoliated ventral valve. The more exfoliated portions are smooth, not striated, as indicated by figure. Bells Gap, Va.	
17. Natural cast of the exterior of ventral valve, showing concentric strlæ. East of Cumberland. Romney formation, Onondaga member. (After Kindle.)	



1



2



3



4



5



6



7



8



9



10



11



12



13



14



15



16



17

PLATE IX

	PAGE
Figs. 1-7. CRANIELLA HAMILTONIÆ Hall.....	131
1. Internal impression of dorsal valve. $\times 1\frac{1}{2}$ .	
2. Upper or dorsal valve from which the shell is gone near the margin. $\times 2$ .	
3. Enlargement of part of preceding showing the finely punctate shell structure. $\times 6$ .	
Romney formation, Hamilton member, Evitts Creek.	
4. Interior of a lower valve attached to a <i>Streptelasma</i> .	
5. Three individuals of different sizes, attached to the surface of <i>Tropidoleptus carinatus</i> .	
6. Dorsal valve.	
7. Internal impression of dorsal valve. $\times 2$ .	
Hamilton formation, New York.	
Fig. 8. PHOLIDOPS HAMILTONIÆ Hall.....	132
Interior of valve. $\times 8$ . Romney formation, Onondaga member, Wil- liams Road, $3\frac{1}{2}$ miles southeast of Cumberland.	
Figs. 9, 10. PHOLIDOPS CF. AREOLATA (Hall).....	133
9. Cast of the ventral valve.	
10. Internal cast of the ventral valve. The slender impressed median line of the figure has about twice the proper length. It is con- spicuous only near the apex of the crescent-shaped depression. $\times 5$ .	
Romney formation, Onondaga member, Bells Valley, Virginia. (After Kindle.)	
Figs. 11-17. STROPHEODONTA (LEPTOSTROPHIA) PERPLANA (Conrad).....	134
11. Partly exfoliated interior of dorsal valve. Iron Bridge over Town Creek, northeast of Oldtown.	
12. Apparently exfoliated interior of dorsal valve, same locality.	
13. Internal impression of small ventral valve. $\times 1\frac{1}{4}$ . Williams Road, $\frac{1}{4}$ mile east of Queen City Hotel, Cumberland.	
14. Further enlargement of preceding specimen, showing crenulated hinge-line. $\times 3$ .	
15. Internal impression showing median ridge. Iron Bridge over Town Creek, northeast of Oldtown.	
16. Internal impression of ventral valve showing muscular impres- sions. McCoys Ferry. Romney formation, Hamilton member.	
17. An enlargement of the striæ. Hamilton formation, New York.	



1



2



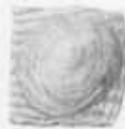
3



4



5



6



7



8



11



12



13



9



17



15



16



10



14

PLATE X

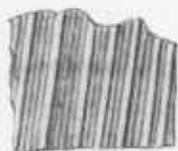
	PAGE
Fig. 1. STROPHEODONTA DEMISSA (Conrad).....	136
Ventral valve. Romney formation, Hamilton member, Hancock-Har- rlsonville Road, about 2 miles north of Hancock.	
Figs. 2-5. STROPHEODONTA (DOUVILLINA) INEQUISTRIATA (Conrad).....	138
2. Interior of ventral valve, showing fragment of shell near lateral margin.	
3. Enlargement of same, showing striæ. × 6.	
4. Squeeze of No. 2.	
Romney formation, Hamilton member, Evitts Creek.	
5. Interior of ventral valve. Hamilton formation, New York.	
Figs. 6, 7. STROPHEODONTA CONCAVA Hall.....	139
6. Interior of dorsal valve, showing its strongly pustulose character and part of crenulated hinge-line. Romney formation, Hamilton member, Evitts Creek.	
7. Ventral valve which is carinate along the center. Hamilton forma- tion, New York.	
Figs. 8, 9. PHOLIDOSTROPHIA PENNSYLVANICA Kindle.....	141
8. Ventral valve of type. × 3. East of Cumberland.	
9. Interior of ventral valve, showing short and very slender median septum. Berkeley Springs, W. Va.	
Romney formation, Onondaga member. (After Kindle.)	
Figs. 10, 11. LEPTENA RHOMBOIDALIS (Wilckens).....	141
10. Fragment of ventral valve. Romney formation, Hamilton member, Ernstville.	
11. View of dorsal valve. Hamilton formation, New York.	



1



2



3



6



4



7



5



9



11



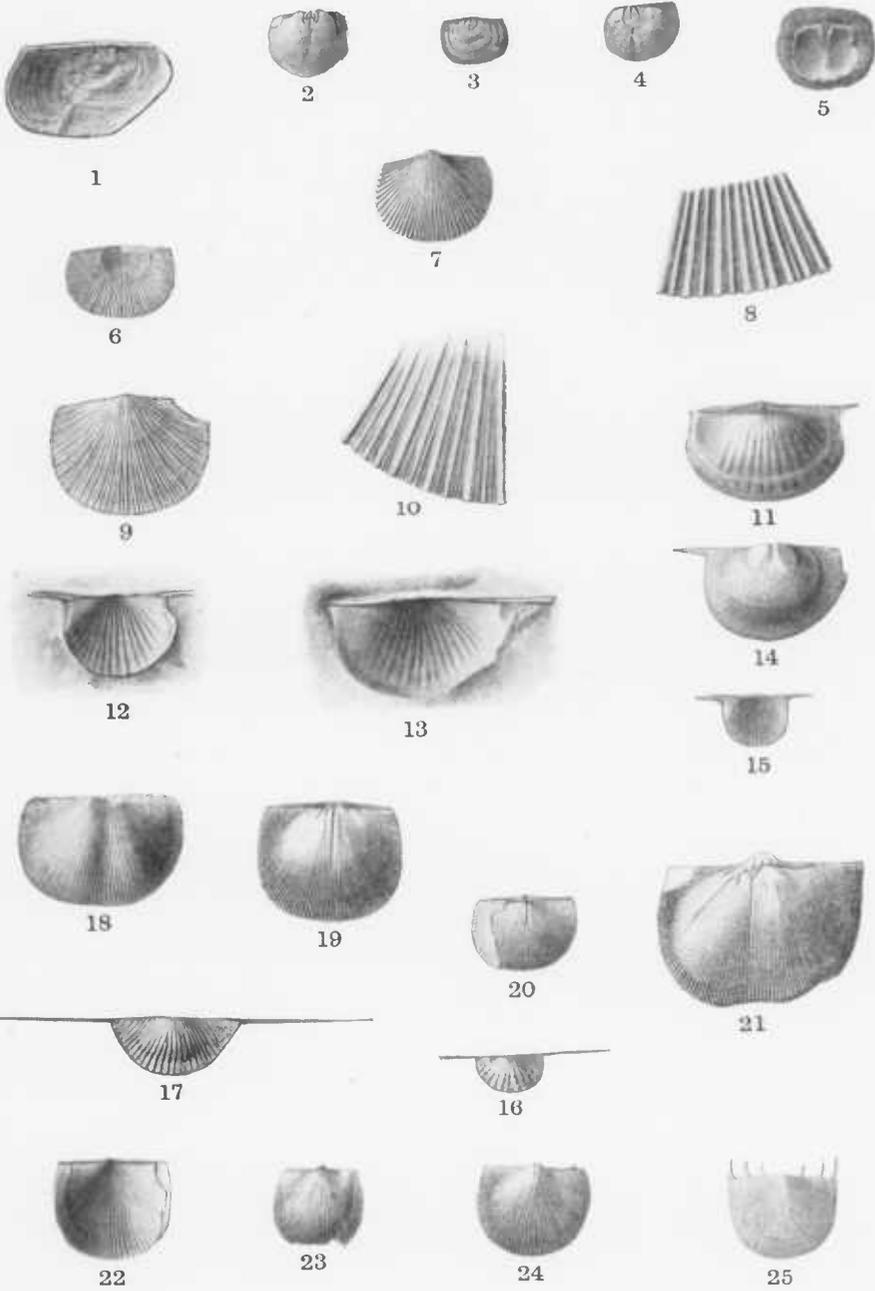
8



10

PLATE XI

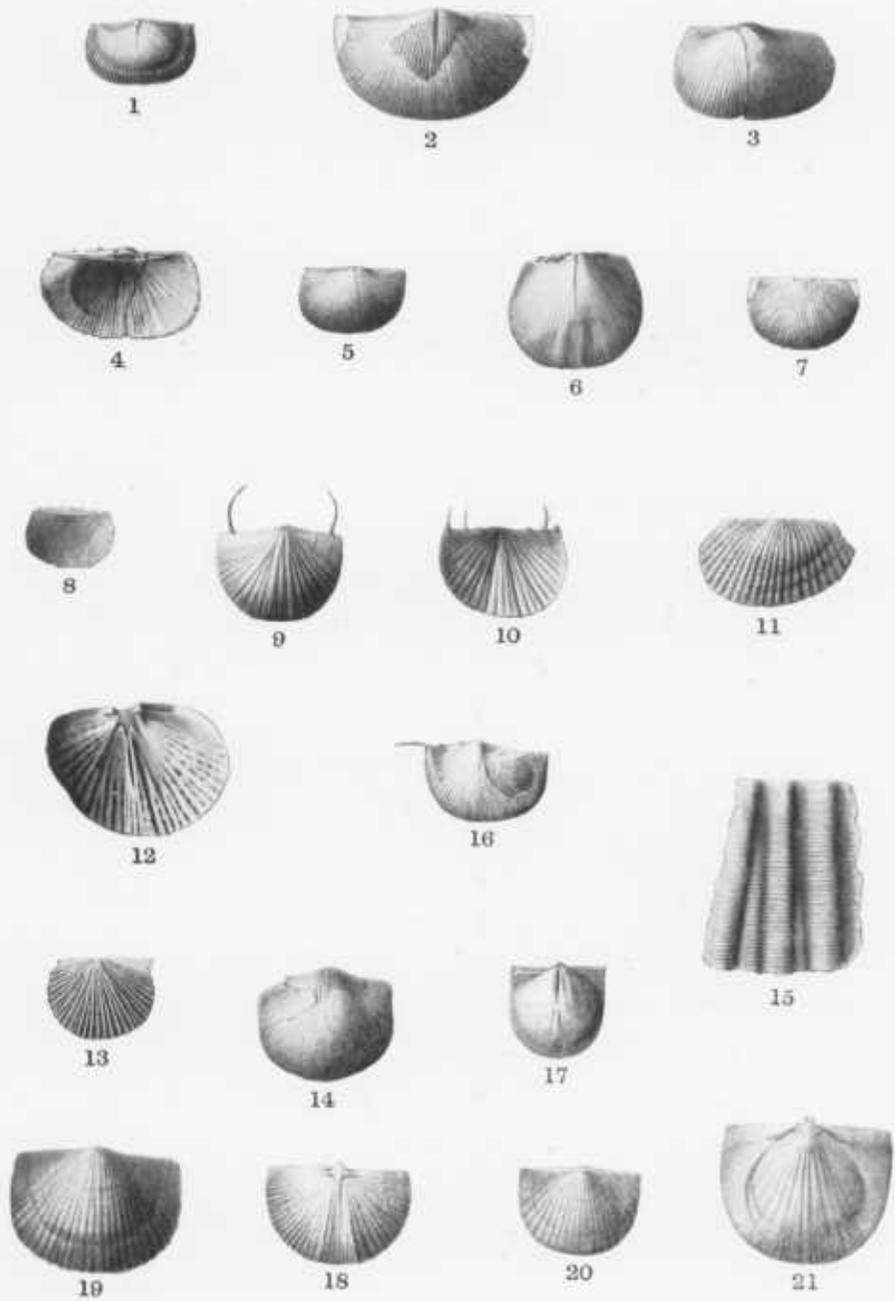
	PAGE
Figs. 1-5. <i>LEPTÆNISCA AUSTRALIS</i> Kindle.....	143
1-3. Ventral valves. Fig. 1 × 2. Berkeley Springs, W. Va.	
4. Type specimen, ventral valve. × 2. Berkeley Springs, W. Va.	
5. Interior of dorsal valve. New Bloomfield, Pa. Romney formation, Onondaga member. (After Kindle.)	
Figs. 6-10. <i>SCHUCHERTELLA VARIABILIS</i> Prosser n. sp.....	144
6. Dorsal valve (?). Williams Road, ¼ mile east of Queen City Hotel, Cumberland.	
7. Ventral valve. × 1¼. Same locality.	
8. Portion of same enlarged to show character of striae. × 4.	
9. Dorsal valve (?).	
10. Portion of same enlarged to show regular variation in strength of radiating striae. × 4. Romney formation, Hamilton member.	
Figs. 11-17. <i>CHONETES MUCRONATUS</i> Hall.....	146
11. Ventral valve. × 2. McCoys Ferry.	
12. Ventral valve, showing two spines near each cardinal angle. × 2. Same locality.	
13. Partly exfoliated interior of ventral valve, showing cardinal spine. × 2. Same locality.	
14. Interior of ventral valve showing muscular impressions and one cardinal spine. × 2. Same locality. Romney formation, Hamilton member.	
15. Dorsal valve, showing cardinal spines. Hamilton formation, New York.	
16. Small pedicle valve. × 3. Cumberland.	
17. A pedicle valve of average size and appearance, showing the long spines. × 2. Cumberland. Romney formation, Onondaga member. (After Kindle.)	
Figs. 18-21. <i>CHONETES CORONATUS</i> (Conrad).....	148
18. Partly exfoliated ventral valve, showing shallow median sinus and cardinal spines. Evitts Creek.	
19. Interior of ventral valve, showing pustulose pittings toward margin of shell. Hancock-Harrisonville Road, about 2 miles north of Hancock.	
20. Dorsal valve. Hancock-Harrisonville Road, about 2 miles north of Hancock.	
21. Interior of ventral valve showing pustulose pittings. McCoys Ferry. Romney formation, Hamilton member.	
Figs. 22-25. <i>CHONETES SETIGER</i> (Hall).....	152
22. Ventral valve, partly exfoliated. × 2. Iron Bridge over Town Creek, northeast of Oldtown.	
23. Dorsal valve. × 1½. West of Tonoloway Ridge.	
24. Interior of ventral valve, showing pustulose pittings toward margin of shell. × 1½. McCoys Ferry. Romney formation, Hamilton member.	
25. Ventral valve showing cardinal spines. × 2. Hamilton formation, New York.	



MOLLUSCOIDEA—BRACHIOPODA

PLATE XII

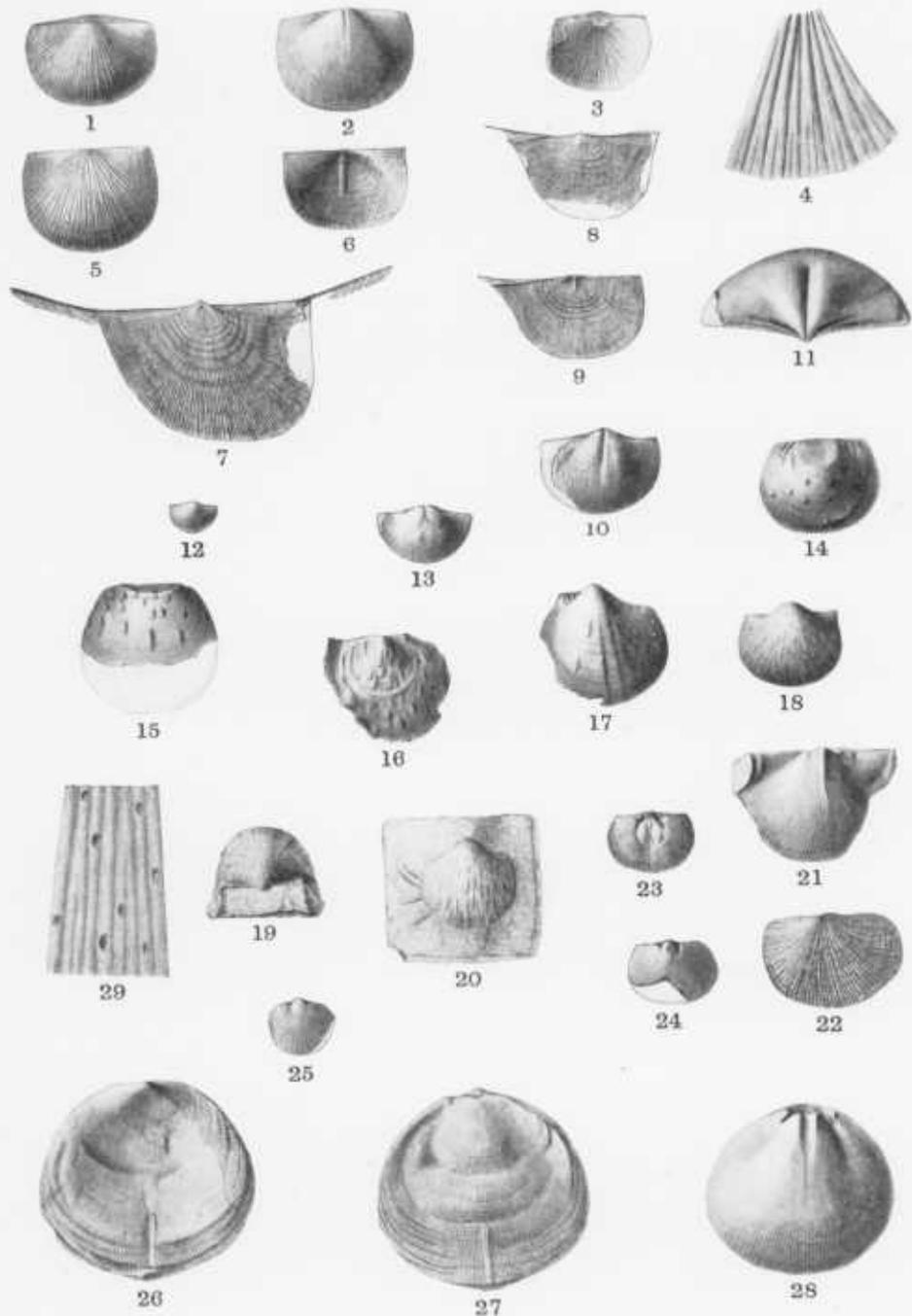
	PAGE
Figs. 1-8. <i>CHONETES SCITULUS</i> Hall.....	150
1. Interior of ventral valve. $\times 1\frac{1}{2}$ . 21st Bridge.	
2. Ventral valve. $\times 1\frac{1}{2}$ . Right bank of Potomac about 4 miles south of Cumberland.	
3. Ventral valve. $\times 1\frac{1}{2}$ . Same locality.	
4. Dorsal valve of same specimen, showing cardinal area and spines of ventral valve. $\times 1\frac{1}{2}$ .	
5. Partly exfoliated dorsal valve (?). $\times 1\frac{1}{4}$ . Iron Bridge over Town Creek northeast of Oldtown.	
6. Interior of ventral valve. $\times 2\frac{1}{4}$ . B. & O. R. R. cut opposite Hancock.	
7. Dorsal valve (?). $\times 1\frac{1}{2}$ . McCoys Ferry. Romney formation, Hamilton member.	
8. Dorsal valve, showing cardinal area and deltidium. Hamilton formation, New York.	
Figs. 9-13. <i>CHONETES LEPIDUS</i> Hall.....	153
9. Ventral valve partly exfoliated, showing two cardinal spines. $\times 3$ . Evitts Creek.	
10. Valve showing three cardinal spines. $\times 4$ . Evitts Creek.	
11. Interior of dorsal valve (?). $\times 3$ . Iron Bridge over Town Creek, northeast of Oldtown.	
12. Interior of ventral valve, showing cardinal teeth. $\times 3$ . West of Tonoloway Rldge.	
13. Ventral valve (?). $\times 3$ . B. & O. R. R. cut opposite Hancock. Romney formation, Hamilton member.	
Figs. 14-21. <i>CHONETES VICINUS</i> (Castelnau).....	155
14. Ventral valve. Evitts Creek.	
15. Portion of the same near the umbo, showing the intercalation of radiating and fine concentric stræ. $\times 8$ .	
16. Partly exfoliated ventral valve showing one cardinal spine. $\times 1\frac{1}{4}$ . Iron Bridge over Town Creek, northeast of Oldtown.	
17. Interior of ventral valve. $\times 1\frac{1}{4}$ . McCoys Ferry.	
18. Interior of dorsal valve. $\times 2$ . Hancock-Harrisonville Road, 2 miles north of Hancock.	
19-20. Exteriors of ventral valves. $\times 2$ . Same locality.	
21. Interior of the dorsal valve. $\times 3$ . Same locality. Romney formation, Hamilton member.	



MOLLUSCOIDEA—BRACHIOPODA

PLATE XIII

	PAGE
Figs. 1-6. <i>CHONETES MARYLANDICUS</i> Prosser n. sp.....	157
1. Partly exfoliated interior of dorsal valve. $\times 1\frac{1}{2}$ . 21st Bridge.	
2. Interior of ventral valve. $\times 1\frac{1}{2}$ . Same locality.	
3. Exterior of dorsal valve. $\times 1\frac{1}{2}$ . Same locality.	
4. Portion of the same enlarged, showing the bifurcating striæ and the radiating thread-like ones. $\times 5$ .	
5. Partly exfoliated interior of dorsal valve. $\times 2$ . 21st Bridge.	
6. Interior of ventral valve, showing rounded median ridge. $\times 1\frac{1}{2}$ . Same locality.	
Romney formation, Hamilton member.	
Figs. 7-9. <i>CHONETES RUGOSUS</i> Kindle.....	158
7. Exfoliated ventral valve, showing imperfectly the subtended processes of the mucronate spines. $\times 2$ .	
8. Type, showing a ventral valve with the peculiar spines attached latterly to the hinge line. $\times 2$ .	
9. Natural mold of the exterior of a ventral valve. $\times 2$ .	
Romney formation, Onondaga member, 3 miles east of Cumberland. (After Kindle.)	
Figs. 10-13. <i>ANOPLEA NUCLEATA</i> .....	159
10, 11. Casts of two ventral valves, showing two types of medium septum, one terminating anteriorly in an indistinct Y-shaped process. $\times 3$ .	
12. Cardinal view of natural cast of pedicle valve, showing filling of oblique cardinal tubes. $\times 5$ .	
13. Pedicle view.	
Romney formation, Onondaga member, Mendota, Va. (After Kindle.)	
Figs. 14-16. <i>STROPHALOSIA TRUNCATA</i> (Hall).....	160
14. Exfoliated ventral valve, showing truncated umbo. $\times 3$ . Iron Bridge over Town Creek, northeast of Oldtown.	
15. Part of an exfoliated ventral valve. $\times 4$ . Same locality.	
16. Exfoliated dorsal valve. $\times 2$ . Evitts Creek.	
Romney formation, Hamilton member.	
Fig. 17. <i>PRODUCTELLA</i> cf. <i>SPINULICOSTA</i> Hall.....	162
Exfoliated ventral valve. $\times 2$ . Williams Road, $\frac{1}{4}$ mile east of Queen City Hotel, Cumberland. Romney formation, Hamilton member.	
Figs. 18-20. <i>PRODUCTELLA SPINULICOSTA</i> Hall.....	162
18. Ventral valve of a small broad form.	
19. Cardinal view of ventral valve.	
20. Small individual imbedded in the rock and showing attached spines.	
Hamilton formation, New York.	
Fig. 21. <i>PRODUCTELLA</i> (?) <i>SCHUCHERTI</i> Prosser n. sp.....	163
Imperfect ventral valve. Ernstville.	
Figs. 22-25. <i>DALMANELLA LENTICULARIS</i> (Vanuxem).....	164
22. Dorsal view. $\times 2$ .	
23. Interior of a dorsal valve.	
24, 25. Two fragmentary casts of ventral valves.	
Romney formation, Onondaga member, Berkeley Springs, W Va. (After Kindle.)	
Figs. 26-29. <i>RHIPIDOMELLA VANUXEMI</i> Hall.....	165
26. Ventral valve. Evitts Creek.	
27. Dorsal valve of same specimen.	
28. Interior of dorsal valve. Williams Road, $\frac{1}{4}$ mile east of Queen City Hotel, Cumberland.	
Romney formation, Hamilton member.	
29. An enlargement of the surface striæ. Hamilton formation, New York.	



MOLLUSCOIDEA—BRACHIOPODA

PLATE XIV

	PAGE
Figs. 1-5. RHIPIDOMELLA LEUCOSIA Hall.....	166
1. Interior of dorsal valve. Williams Road, $\frac{3}{4}$ mile east of Queen City Hotel, Cumberland. Romney formation, Hamilton member.	
2. Dorsal valve of specimen of ordinary size.	
3. Ventral valve of the same. Hamilton formation, New York.	
4. Interior of dorsal valve showing cardinal process and dental sockets. Little Run, near Hancock.	
5. Interior of ventral valve showing muscle scars. Two miles north of Hancock. Romney formation, Hamilton member.	
Figs. 6-9. RHIPIDOMELLA PENELOPE Hall.....	167
6. Broken specimen of ventral valve (?). Evitts Creek. Romney formation, Hamilton member.	
7. Interior of dorsal valve. Cumberland.	
8. Enlargement of surface, showing the character of the striæ, the ordinary puncta and the elongate tubular openings.	
9. Interior of ventral valve showing the muscular impressions and cardinal teeth. Hamilton formation, New York.	
Fig. 10. RHIPIDOMELLA CYCLAS Hall (?).....	169
10. External impression of ventral valve. $\times 1\frac{1}{2}$ . Williams Road near church, $3\frac{1}{2}$ miles southeast of Cumberland.	
Figs. 11, 12. DALMANELLA LENTICULARIS (Vanuxem).....	164
11. Dorsal valve (?). $\times 1\frac{1}{4}$ . Ernstville.	
12. External impression of dorsal valve. $\times 1\frac{1}{2}$ . Hanging Rock, W. Va. Romney formation, Onondaga member.	
Figs. 13, 14. SCHIZOPHORIA STRIATULA (Schlotheim) (?).....	170
13. Partly exfoliated ventral valve. Ernstville.	
14. A portion of the lateral margin enlarged, showing punctate structure. $\times 5$ . Romney formation, Hamilton member.	
Figs. 15-17. CAMAROTÆCHIA CONGREGATA (Conrad).....	171
15. Interior of dorsal valve. $\times 1\frac{1}{4}$ .	
16. Interior of somewhat distorted small dorsal valve. $\times 1\frac{1}{4}$ .	
17. Partly exfoliated ventral valve. $\times 1\frac{1}{4}$ . Run at eastern end of Hancock. Romney formation, Hamilton member.	



1



2



3



4



6



5



7



8



9



10



11



12



13



14



15



16

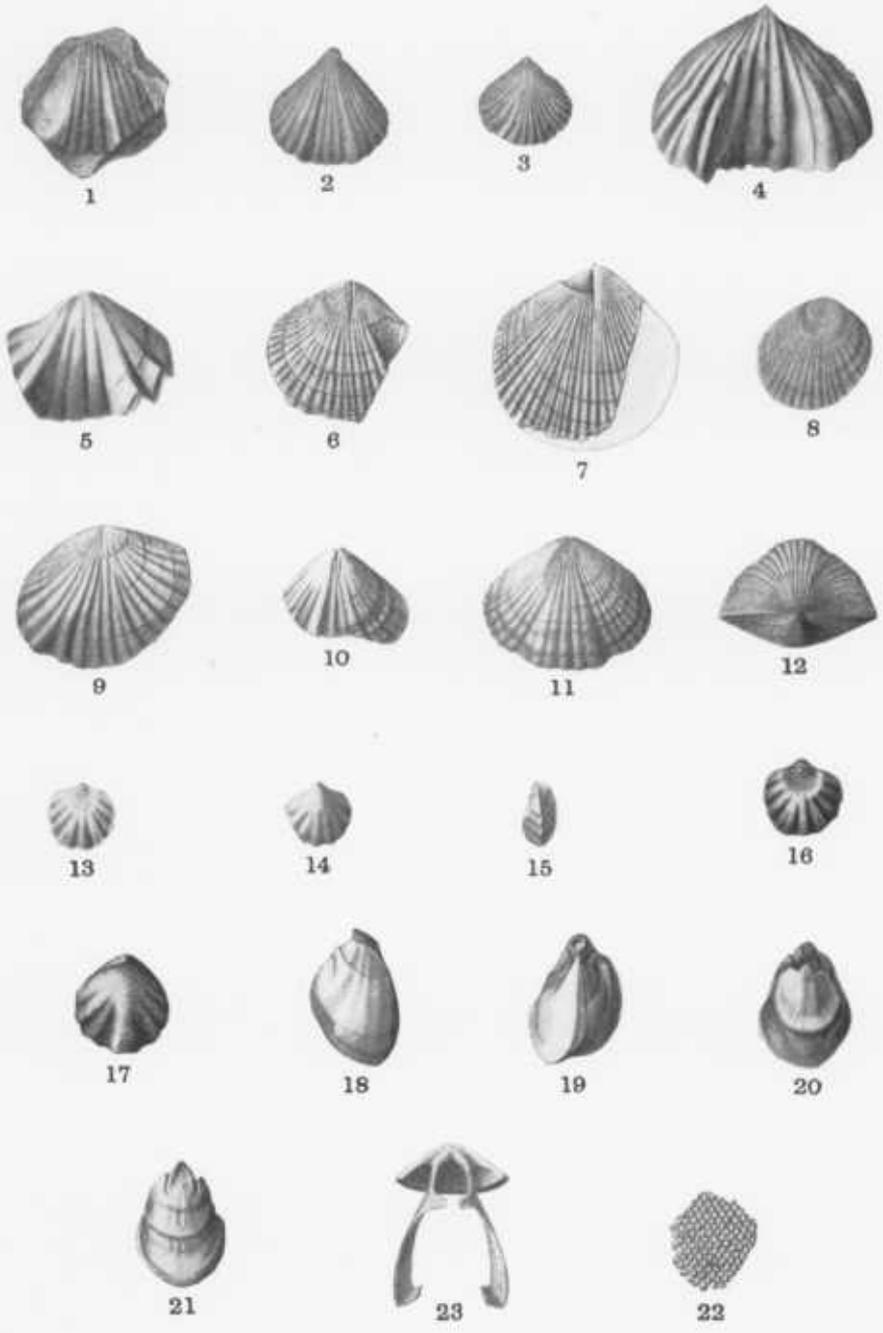


17

MOLLUSCOIDEA—BRACHIOPODA

PLATE XV

	PAGE
Figs. 1-3. <i>CAMAROTÆCHIA PROLIFICA</i> Hall.....	173
1. Exfoliated ventral valve. $\times 1\frac{1}{2}$ . Right bank of Potomac, about 4 miles south of Cumberland. Romney formation, Hamilton member.	
2. Ventral valve of an unusually large specimen.	
3. Interior of dorsal valve. Hamilton formation, New York.	
Fig. 4. <i>CAMAROTÆCHIA SAPHHO</i> Hall.....	174
Interior of ventral valve. Romney formation, Hamilton member.	
Fig. 5. <i>CAMAROTÆCHIA</i> sp. ....	175
Interior of ventral valve. $\times 1\frac{1}{4}$ . Flintstone Creek in Gilpin. Romney formation, Hamilton member.	
Figs. 6-8. <i>LIORHYNCHUS LIMITARE</i> (Vanuxem).....	175
6, 7. Crushed and broken dorsal valves. $\times 1\frac{1}{2}$ . 21st Bridge.	
8. Young specimen crushed. $\times 3$ . Same locality. Romney formation, Marcellus member.	
Figs. 9-12. <i>LIORHYNCHUS LAURA</i> (Billings).....	177
9. Somewhat distorted and crushed exfoliated dorsal valve. $\times 1\frac{1}{2}$ . Williams Road near church, $3\frac{1}{2}$ miles southeast of Cumberland.	
10. Interior of dorsal valve. $\times 1\frac{1}{4}$ . Williams Road near church, $3\frac{1}{2}$ miles southeast of Cumberland. Romney formation, Hamilton member.	
11. Dorsal valve of typical specimen.	
12. Cardinal view. Hamilton formation, New York.	
Figs. 13-17. <i>LIORHYNCHUS</i> cf. <i>MYSIA</i> .....	178
13-15. Dorsal, ventral and side view of shell of usual size.	
16. Dorsal view of larger specimen with duplicate plications.	
17. Dorsal view of large individual. Marcellus formation, New York.	
Figs. 18-23. <i>EUNELLA LINCKLÆNI</i> Hall.....	179
18. Interior of ventral valve, distorted by pressure. Iron Bridge over Town Creek northeast of Oldtown.	
19. Interior of dorsal valve of same specimen.	
20. Interior of dorsal valve. Road east of Pine Hill, about 4 miles north of Oldtown.	
21. Partly exfoliated ventral valve of same specimen.	
22. Enlargement showing shell structure of same. $\times$ about 20. Romney formation, Hamilton member.	
23. Brachial loop. Hamilton formation, New York.	



MOLLUSCOIDEA—BRACHIOPODA

PLATE XVI

	PAGE
Figs. 1-3. <i>CENTRONELLA</i> CF. <i>OVATA</i> Hall.....	179
Dorsal, side and ventral view of shell. Onondaga formation, New York.	
Figs. 4-6. <i>ATRYPA</i> <i>RETICULARIS</i> (Linné).....	183
4. Partly exfoliated ventral valve (?).	
5. Dorsal valve.	
6. Ventral valve.	
Romney formation, Hamilton member, Evitts Creek.	
Figs. 7-14. <i>TROPIDOLEPTUS</i> <i>CARINATUS</i> (Conrad).....	181
7, 8. Ventral and dorsal valves of large specimen. 21st Bridge.	
9, 10. Ventral and dorsal valves of medium specimen. Same locality.	
11. Surface enlarged showing punctæ. × 4. Evitts Creek.	
12. Exterior of ventral valve.	
13, 14. Interior of ventral and dorsal valves. × 2. Near Tonoloway Ridge, Washington County.	
Romney formation, Hamilton member.	



PLATE XVII

	PAGE
Figs. 1-9. <i>CYRTINA HAMILTONENSIS</i> Hall.....	185
1. Interior of ventral valve distorted by crushing. McCoys Ferry.	
2. Cardinal area of same, showing delthyrium.	
3. Interior of dorsal valve. McCoys Ferry.	
4. Dorsal valve. McCoys Ferry. $\times 1\frac{1}{2}$ .	
5. Enlarged part of shell showing its structure. $\times 4$ . National Road northeast of Cumberland.	
6. Cardinal area of ventral valve. $\times 2$ . Near Hancock.	
7, 8. Internal casts of ventral valve. Near Hancock. Romney formation, Hamilton member.	
9. Dorsal valve and cardinal area of ventral valve, showing the elongate foramen on the deltidial plate. Hamilton formation, New York.	
Figs. 10-18. <i>SPIRIFER MUCRONATUS</i> (Conrad).....	187
10. Ventral valve. Evitts Creek.	
11. Dorsal valve of same.	
12. Interior of ventral valve. Iron Bridge over Town Creek, northeast of Oldtown.	
13. Interior of dorsal valve. Same locality.	
14. Interior of partly exfoliated dorsal valve. McCoys Ferry.	
15-17. Exteriors of ventral valves. Near Hancock.	
18. Interior of ventral valve. Near Hancock. Romney formation, Hamilton member.	

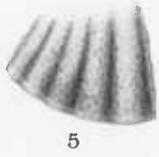


PLATE XVIII

	PAGE
Figs. 1-6. <i>SPIRIFER GRANULOSUS</i> (Conrad).....	190
1. Ventral valve. 21st Bridge.	
2. Interior of ventral valve. Flintstone Creek in Gilpin.	
3. Interior of dorsal valve of same specimen.	
4. Enlarged portion of surface from sinus of ventral valve, showing the small granules. $\times 2$ . Evitts Creek.	
5. Same more highly magnified. $\times 8$ . Romney formation, Hamilton member.	
6. An enlargement of the surface, showing its papillose character. Hamilton formation, New York.	
Figs. 7-9. <i>SPIRIFER AUDACULUS</i> (Conrad).....	192
7. Ventral valve, partly exfoliated. Evitts Creek.	
8. Interior of ventral valve. Warrior Mountain, east of Rush.	
9. Interior of dorsal valve and cardinal area of ventral valve. Western Maryland. Romney formation, Hamilton member.	
Fig. 10. <i>SPIRIFER ACUMINATUS</i> (Conrad).....	193
Interior of broken dorsal valve. McCoy's Ferry. Romney formation, Hamilton member.	



1



2



3



ca 4



5



7



8



6



9



10

PLATE XIX

	PAGE
Figs. 1-7. <i>SPIRIFER TULLIUS</i> Hall.....	195
1. Interior of ventral valve. Hancock-Harrisonville Road, about 2 miles north of Hancock.	
2. Interior of small ventral valve. $\times 1\frac{1}{2}$ . Same locality.	
3. Exterior of ventral valve. Near Hancock.	
4. Interior of dorsal valve. Little Run, near Hancock.	
5. Cardinal view of ventral valve. Near Hancock.	
6. Enlargement of same, showing fine striæ on sinus and plications. $\times 4\frac{1}{2}$ .	
Romney formation, Hamilton member.	
7. Dorsal valve of average specimen. Hamilton formation, New York.	
Figs. 8, 9. <i>SPIRIFER ANOUSTUS</i> Hall.....	196
8. Cardinal view of internal cast. Warrior Mountain, east of Rush. Romney formation, Hamilton member.	
9. Dorsal valve of rather large individual. Hamilton formation, New York.	
Figs. 10-12. <i>SPIRIFER (RETICULARIA) FIMBRIATUS</i> (Conrad).....	197
10. Partly exfoliated dorsal valve. Evitts Creek.	
11. Cardinal view of internal cast. Hardy County, W. Va.	
12. An enlargement of the surface, showing the bases of the spinules. Romney formation, Hamilton member.	
Fig. 13. <i>SPIRIFER</i> cf. <i>CONSOBRINUS</i> (d'Orbigny).....	198
Interior of ventral valve. Town Creek, 6 miles north of Oldtown. Romney formation, Hamilton member.	
Figs. 14-16. <i>SPIRIFER SCULPTILIS</i> var. <i>MARYLANDENSIS</i> Prosser n. var.....	200
14. Dorsal valve. Warrior Mountain, east of Rush.	
15. Squeeze of same. $\times 1\frac{1}{2}$ .	
16. Internal impression of same. Romney formation, Hamilton member.	



1



2



3



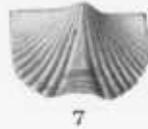
4



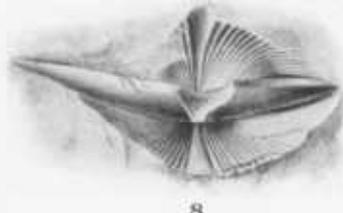
6



5



7



8



9



10



11



12



13



14



15



16

PLATE XX

	PAGE
Figs. 1, 2. <i>AMBOCCELIA UMBONATA</i> Conrad.....	200
1. Partly exfoliated ventral valve. × 2. Ernstville.	
2. Partly exfoliated dorsal valve. × 1½. Eviatts Creek. Romney formation, Hamilton member.	
Figs. 3-6. <i>AMBOCCELIA VIRGINIANA</i> Prosser n. sp.....	202
3. Ventral valve. × 6. 3 miles south of Green Spring, W. Va. Marcellus limestone.	
4. Ventral valve. × 5. Right bank of Potomac, 1½ miles below Cumberland.	
5. Dorsal valve of same specimen. × 5.	
6. Cardinal area and dorsal valve of same specimen. × 5. Romney formation, Hamilton member.	
Figs. 7, 8. <i>AMBOCCELIA PRÆUMBONA</i> Hall (?).....	204
7. Partly exfoliated ventral valve. × 1½.	
8. Interior of ventral valve. × 1¼. Ernstville. Romney formation, Hamilton member.	
Figs. 9-11. <i>AMBOCCELIA PRÆUMBONA</i> Hall.....	204
9. Ventral valve.	
10. Dorsal valve.	
11. Profile view. Hamilton formation, New York.	
Figs. 12-15. <i>NUCLEOSPIRA CONCINNA</i> Hall.....	206
12. Interior of ventral valve (?). × 1½.	
13. Interior of ventral valve. × 1½. Romney formation, Hamilton member, Ernstville.	
14. Ventral valve.	
15. A portion of surface enlarged, showing the character of the spinules. Hamilton formation, New York.	
Figs. 16-23. <i>ANOPLOTHECA (CÆLOSPIRA) ACUTIPPLICATA</i> (Conrad).....	207
16. Ventral valve. × 1¼. Williams Road near church, 3½ miles southeast of Cumberland.	
17. Squeeze of same, showing appearance of ventral valve. × 1¼.	
18. Dorsal valve. × 1¼. Williams Road near church, 3½ miles southeast of Cumberland.	
19. Squeeze of same, showing appearance of dorsal valve. × 1¼.	
20. Interior of partly exfoliated dorsal valve. × 1¼. Williams Road, 3½ miles southeast of Cumberland.	
21. Squeeze of same, showing appearance of dorsal valve. × 1¼.	
22. Squeeze of internal impression of dorsal valve, showing hinge-plate, deep dental sockets and median ridge. × 1¼. Williams Road near church, 3½ miles southeast of Cumberland.	
23. Cast of a dorsal valve. × 2. East of Cumberland. Romney formation, Onondaga member. (Fig. 23 after Kindle.)	
Fig. 24. <i>ANOPLOTHECA CAMILLA</i> (Hall).....	209
View of pedicle valve. Romney formation, Onondaga member, Blair County, Penna. (After Kindle.)	
Figs. 25, 26. <i>VITULINA PUSTULOSA</i> Hall.....	210
25. Exfoliated ventral valve. × 1½. National Road, northeast of Cumberland.	
26. Enlargement from an impression of the surface, showing the appearance of the pustules. × 4. Romney formation, Hamilton member.	



1



2



3



4



5



6



7



8



9



10



11



12



13



14



15



16



17



18



19



20



21



23



24



25



22



26

PLATE XXI

	PAGE
Figs. 1, 2. <i>ATHYRIS SPIRIFEROIDES</i> (Eaton).....	211
1. Ventral valve.	
2. Interior of same, showing the muscular markings. Romney formation, Hamilton member, Evitts Creek.	
Figs. 3, 4. <i>MERISTELLA</i> (?) sp.....	213
3. Ventral valve. × 6.	
4. Dorsal valve (?). × 6. Romney formation, Hamilton member, Iron Bridge over Town Creek, northeast of Oldtown (?).	
Figs. 5-7. <i>PTHONIA SECTIFRONS</i> (Conrad).....	214
5. External impression anterior end of left valve. Romney formation, Hamilton member, Williams Road near church, 3½ miles south- east of Cumberland.	
6. A large left valve narrowed by compression.	
7. A large right valve, showing the form and surface characters. Hamilton formation, New York.	
Figs. 8-10. <i>PROTHYRIS LANCEOLATA</i> Hall.....	215
8. Right valve. × 1½. Romney formation, Hamilton member. Right bank of Potomac, about 3 miles below Cumberland.	
9, 10. Right and left valves. Hamilton formation, New York.	
Figs. 11-13. <i>ORTHONOTA UNDULATA</i> Conrad.....	216
11. View of broken specimen, showing anterior portion of both valves. B. & O. R. R. cut, opposite Hancock.	
12. Right valve. McCoys Ferry. Romney formation, Hamilton member.	
13. A specimen of medium size preserving both valves. Hamilton formation, New York.	



1



2



3



5



6



4



7



8



9



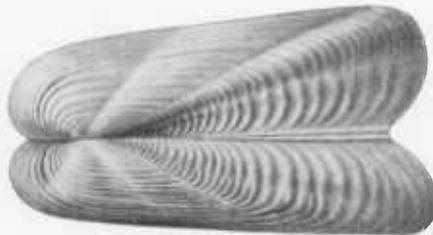
10



12



11



13

MOLLUSCOIDEA—BRACHIOPODA AND MOLLUSCA—PELECYPODA

PLATE XXII

	PAGE
Figs. 1, 2. <i>ORTHONOTA</i> (?) <i>PARVULA</i> Hall.....	217
1. Both valves. × 2.	
2. Dorsal view of same. × 2.	
Romney formation, Hamilton member, Evitts Creek.	
Fig. 3. <i>GRAMMYSIA BISULCATA</i> (Conrad).....	218
Ventral view of distorted and crushed specimen, showing part of both valves. Romney formation, Hamilton member, McCoys Ferry.	
Figs. 4-10. <i>GRAMMYSIA ARCUATA</i> (Conrad).....	219
4. Anterior end of right valve. McCoys Ferry.	
5. Posterior end of left valve of same specimen.	
6, 7. Cardinal and ventral views of a specimen vertically compressed. Pine Hill, 5 miles north of Oldtown.	
8. Right valve distorted by vertical pressure. Town Creek, about 6 miles north of Oldtown. Romney formation, Hamilton member.	
9, 10. Right and left valves. Hamilton formation, New York.	
Figs. 11, 12. <i>TELLINOPSIS SUBEMARGINATA</i> (Conrad).....	222
11. Left valve. Evitts Creek.	
12. Part of left valve showing fine radiating striæ. Right bank of Potomac, about 3 miles below Cumberland. Romney formation, Hamilton member.	



1



2



3



4



5



8



6



7



9



11



12



10

MOLLUSCA—PELECYPODA

PLATE XXIII

	PAGE
Figs. 1, 2. <i>GRAMMYSIA CIRCULARIS</i> Hall.....	220
Right and left valves partly exfoliated, showing muscular scars and pallial line. Hamilton formation, New York.	
Fig. 3. <i>GRAMMYSIA CIRCULARIS</i> (?) Hall.....	220
Left valve. Romney formation, Hamilton member, 21st Bridge.	
Fig. 4. <i>BUCHIOLA HALLI</i> Clarke.....	225
Left valve showing the conspicuous concentric ridges on the plications. × 2. Romney formation, Hamilton member, Evitts Creek.	
Fig. 5. <i>PANENKA</i> CF. <i>DICHOTOMA</i> Hall.....	224
View of a fragmentary right valve. Romney formation, Onondaga member, Oldtown.	
Figs. 6-10. <i>NUCULA CORBULIFORMIS</i> Hall.....	226
6. Right valve. × 1½. Right bank of Potomac River, about 3 miles below Cumberland.	
7. Left valve of same.	
8. Right valve. × 1½. Same locality.	
9. Cardinal view of internal impression showing hinge crenulations. × 1½. Same locality.	
10. Right valve showing varices of growth and concentric striæ. Evitts Creek. Romney formation, Hamilton member.	
Fig. 11. <i>PANENKA</i> CF. <i>MULTIRADIATA</i> Hall.....	225
View of a large right valve showing strong radii. Hamilton formation, New York.	



1



2



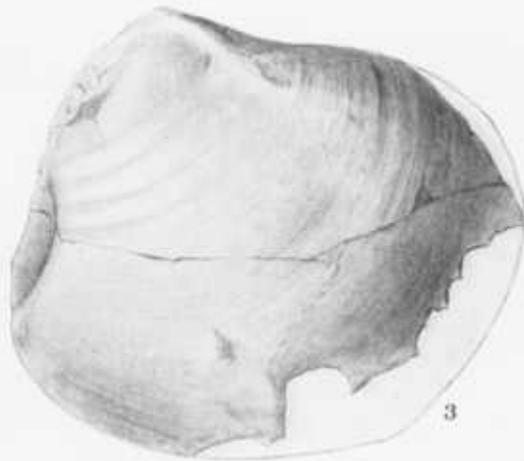
6



7



8



3



4



10



9



5



11

PLATE XXIV

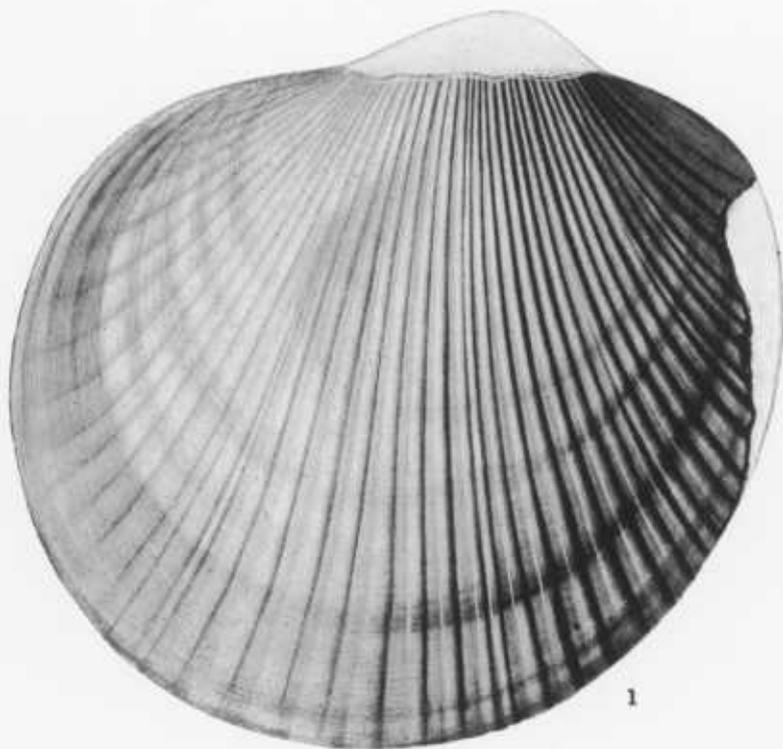
	PAGE
Fig. 1. PANENKA ALTERNATA Hall.....	223
View of a large right valve showing strong radii. Oldtown. Romney formation, Onondaga member.	
Figs. 2, 3. PANENKA OBSOLESCENS Kindle n. sp.....	224
2. View of right valve of type. Oldtown.	
3. Fragmentary right valve. Ridgeville, W. Va. Romney formation, Onondaga member.	



3



2



1

MOLLUSCA—PELECYPODA

PLATE XXV

	PAGE
Figs. 1-5. <i>NUCULA BELLISTRIATA</i> (Conrad).....	227
1. Right valve. $\times 1\frac{1}{2}$ .	
2. Right valve, showing concentric striæ and strong varices of growth. $\times 1\frac{1}{2}$ .	
3. Left valve. $\times 2$ .	
Romney formation, Hamilton member, Evitts Creek.	
4. Interior of right valve, showing muscular scars. $\times 1\frac{1}{2}$ .	
5. Cardinal view of same. $\times 1\frac{1}{2}$ .	
Romney formation, Hamilton member, Western Maryland.	
Figs. 6-8. <i>NUCULA LIRATA</i> (Conrad).....	229
6. Left valve, distorted somewhat about the beak. Romney formation, Hamilton member, Evitts Creek.	
7. Right valve.	
8. Enlarged surface showing strong concentric undulations and fine radiating striæ.	
Hamilton formation, New York.	
Figs. 9, 10. <i>NUCULA LIRATA</i> (Conrad) (?).....	229
9. Interior of left valve, showing muscular scars, pallial line and hinge crenulations. $\times 1\frac{1}{4}$ .	
10. Cardinal view of same specimen, showing muscular scars and hinge crenulations. $\times 1\frac{1}{4}$ .	
Romney formation, Hamilton member, Western Maryland.	
Figs. 11-16. <i>NUCULA VARICOSA</i> Hall.....	230
11, 12. Right and left valves. $\times 1\frac{1}{4}$ .	
13. Left valve, showing concentric striæ and varices of growth. $\times 1\frac{1}{4}$ .	
14. Enlargement from same, showing the character of the concentric striæ and varices of growth. $\times 4$ .	
Romney formation, Hamilton member, Evitts Creek.	
15, 16. Right and left valves. Hamilton formation, New York.	
Figs. 17-20. <i>NUCULITES OBLONGATUS</i> Conrad.....	231
17. Left valve showing fine concentric striæ. Evitts Creek.	
18. Small left valve also showing fine concentric striæ. $\times 2$ . Evitts Creek.	
19. Interior of right valve, showing crenulated hinge and impression of clavicular ridge. National Road, northeast of Cumberland.	
20. Interior of right valve elongated by pressure. Hill in West Vir- ginia, 3 miles south of Cumberland.	
Romney formation, Hamilton member.	



1



2



3



4



6



8



5



7



9



10



11



12



13



14



15



17



19



16



18

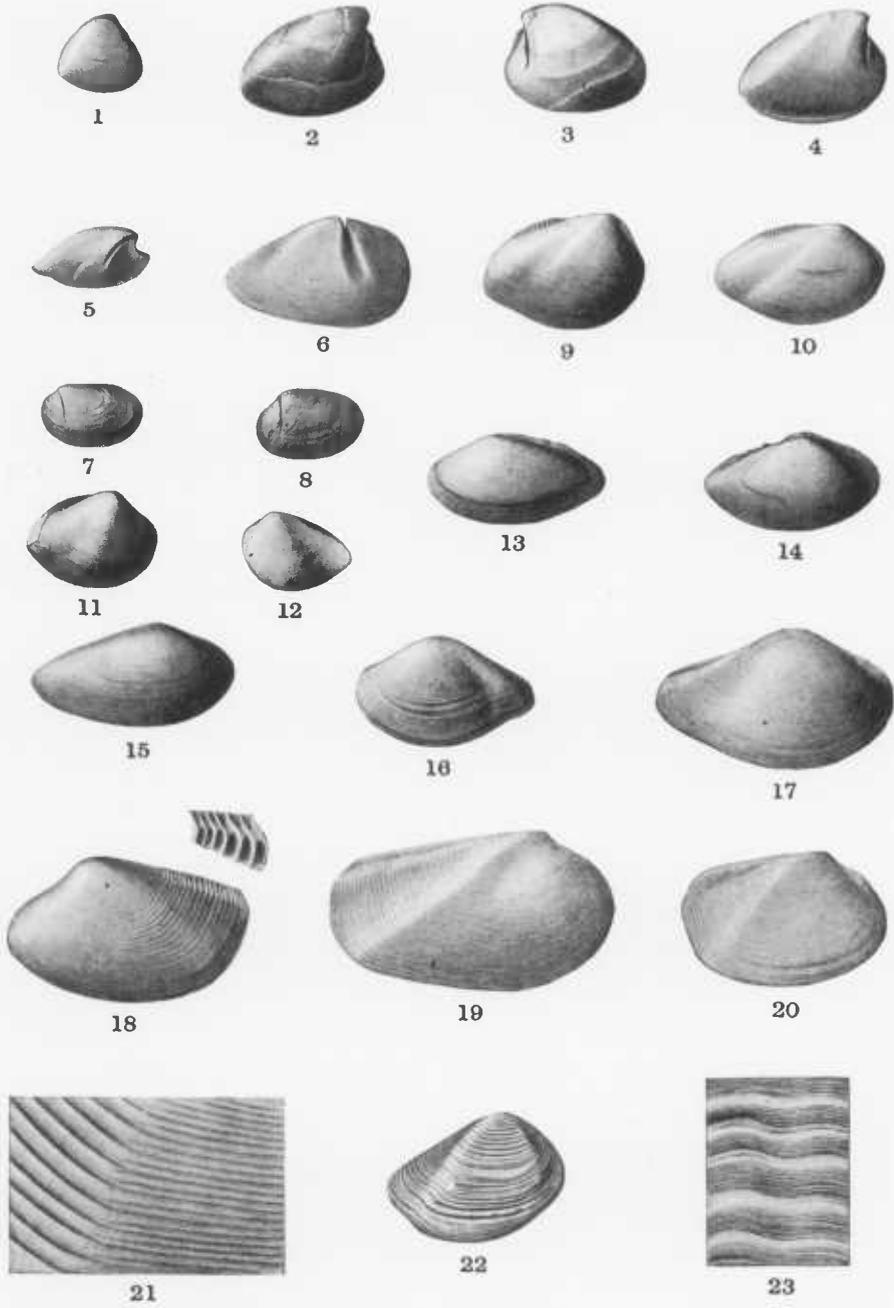


20

MOLLUSCA—PELECYPODA

PLATE XXVI

	PAGE
Figs. 1-5. <i>NUCULITES TRIQUETER</i> Conrad.....	232
1. Small right valve. $\times 1\frac{1}{4}$ . Evlitts Creek.	
2. Partly exfoliated right valve. $\times 1\frac{1}{4}$ . Right bank of Potomac, about 3 miles below Cumberland.	
3. Left valve of same specimen, showing impression of clavicular ridge. $\times 1\frac{1}{4}$ .	
4. Internal impression of right valve, showing clavicular ridge. $\times 1\frac{1}{4}$ . Hill in West Virginia, about 3 miles south of Cumberland.	
5. Internal impression of right valve, distorted by pressure, showing impression of clavicular ridge. $\times 1\frac{1}{4}$ . McCoys Ferry. Romney formation, Hamilton member.	
Fig. 6. <i>NUCULITES GRABAU</i> Prosser n. sp.....	234
Internal impression of right valve, showing impression of strong clavicular ridge. $\times 1\frac{1}{2}$ . McCoys Ferry. Romney formation, Hamilton member.	
Figs. 7, 8. <i>NUCULITES MODULATUS</i> Kindle.....	234
7. Type specimen.	
8. Another individual. Romney formation, Onondaga member, Ridgeville, W. Va. (After Kindle.)	
Figs. 9-12. <i>PALÆONEILO CONSTRICTA</i> (Conrad).....	235
9. Right valve, showing crenulations of hinge-line, fine concentric striæ and constriction. $\times 1\frac{1}{4}$ . Evlitts Creek.	
10. Right valve somewhat elongated by pressure, showing crenulations of hinge-line, fine striæ and constriction. $\times 1\frac{1}{4}$ . Evlitts Creek.	
11. Small right valve. $\times 1\frac{1}{4}$ . Evlitts Creek.	
12. Small left valve. $\times 1\frac{1}{4}$ . Williams Road, $\frac{1}{4}$ mile east of Queen City Hotel, Cumberland. Romney formation, Hamilton member.	
Figs. 13-15. <i>PALÆONEILO PLANA</i> Hall.....	237
13. Left valve, showing hinge crenulations. $\times 1\frac{1}{2}$ . Evlitts Creek.	
14. Small right valve, showing hinge crenulations. $\times 2$ . Evlitts Creek.	
15. Right valve. $\times 1\frac{1}{4}$ . Right bank of Potomac, about 3 miles below Cumberland. Romney formation, Hamilton member.	
Fig. 16. <i>PALÆONEILO MAXIMA</i> (Conrad) (?).....	238
Left valve with strong sulcus. Romney formation, Hamilton mem- ber, Evlitts Creek.	
Fig. 17. <i>PALÆONEILO MAXIMA</i> (Conrad).....	238
Right valve with greater height than usual. Hamilton formation, New York.	
Figs. 18-21. <i>PALÆONEILO FECUNDA</i> Hall.....	239
18. Left valve showing concentric striæ, $\times 1\frac{1}{4}$ , and above that, a portion of the surface bordering the hinge-line enlarged 3 times. Williams Road, $\frac{1}{4}$ mile east of Queen City Hotel, Cumberland.	
19, 20. Right valves.	
21. An enlargement of the surface striæ from fig. 20. Romney formation, Hamilton member (figs. 19-21 after Hall).	
Figs. 22, 23. <i>PALÆONEILO PERPLANA</i> VAR. <i>GRABAU</i> Prosser n. var.....	240
22. Squeeze of external impression of right valve.	
23. Surface of same. $\times 4$ . Romney formation, Hamilton member, Evlitts Creek.	



MOLLUSCA—PELECYPODA

PLATE XXVII

	PAGE
Figs. 1-6. <i>PALEONEILO EMARGINATA</i> (Conrad) .....	241
1. Left valve, showing the strong concentric ridges. Evitts Creek.	
2. Left valve of shorter form. Hancock-Harrisonville Road, about 2 miles north of Hancock.	
3. Right valve of same specimen.	
4. External impression of right valve. McCoys Ferry. Romney formation, Hamilton member.	
5, 6. Right and left valves. Hamilton formation, New York.	
Fig. 7. <i>PALEONEILO TENUISTRIATA</i> Hall (?) .....	242
Right valve of a broken and mostly exfoliated specimen. Romney formation, Hamilton member, McCoys Ferry.	
Figs. 8, 9. <i>PALEONEILO TENUISTRIATA</i> Hall .....	242
Left and right valves. Romney formation, Hamilton member, near Cumberland. (After Hall.)	
Figs. 10-13. <i>PALEONEILO CLARKEI</i> Prosser n. sp. ....	244
10. Left valve.	
11. Broken left valve, sinus at anterior end caused by crushing.	
12. Right valve, shortened by the breaking away of the posterior end.	
13. Interior of hinge line of No. 12 enlarged, showing the taxodont dentition. $\times 2$ . Romney formation, Hamilton member, right bank of Potomac River, about 3 miles below Cumberland.	
Figs. 14, 15. <i>PALEONEILO ROWEI</i> Prosser n. sp. ....	244
14. Internal impression of left valve, showing muscular markings and hinge crenulations.	
15. Squeeze of same specimen. Romney formation, Hamilton member, McCoys Ferry.	
Fig. 16. <i>PALEONEILO MARYLANDICA</i> Prosser n. sp. ....	245
Right valve. Hancock-Harrisonville Road, about 2 miles north of Hancock. Romney formation, Hamilton member.	



1



2



3



4



5



6



7



8



9



10



11



12



14



13



15



16

PLATE XXVIII

	PAGE
Figs. 1, 2. <i>TANCREDIOPSIS CLARKEI</i> Prosser n. sp. ....	245
1. External impression of right valve. $\times 1\frac{1}{4}$ .	
2. Squeeze of same specimen, showing external appearance of right valve. $\times 1\frac{1}{4}$ .	
Romney formation, Hamilton member, Western Maryland.	
Figs. 3, 4. <i>LEDA DIVERSA</i> Hall. ....	247
3. Right valve. $\times 2$ . Romney formation, Hamilton member, McCoys Ferry.	
4. Left valve. $\times 2$ . Hamilton formation, New York.	
Figs. 5-7. <i>LEDA ROSTELLATA</i> (Conrad) ....	247
5. Right valve of young specimen. $\times 3$ . Romney formation, Hamilton member, National Road west of Tonoloway Ridge.	
6, 7. Right and left valves. $\times 2$ . Hamilton formation, New York.	
Figs. 8-12. <i>PARALLELON HAMILTONÆ</i> (Hall) ....	248
8. External impression showing part of both valves.	
9, 10. Right and left valves, margins partly broken away.	
Romney formation, Hamilton member, Evitts Creek.	
11. Right valve showing surface markings. Hamilton formation, New York.	
12. Left valve of an unusually large individual from near Cumberland. (After Hall.)	
Fig. 13. <i>LIOPTERIA</i> cf. <i>CONRADI</i> Hall. ....	252
Partly exfoliated left valve. Romney formation, Hamilton member, Iron bridge over Town Creek, northeast of Oldtown.	
Fig. 14. <i>LIOPTERIA CONRADI</i> Hall. ....	252
A large left valve. Hamilton formation, New York.	



1



2



3



4



5



6



7



8



9



10



11



12



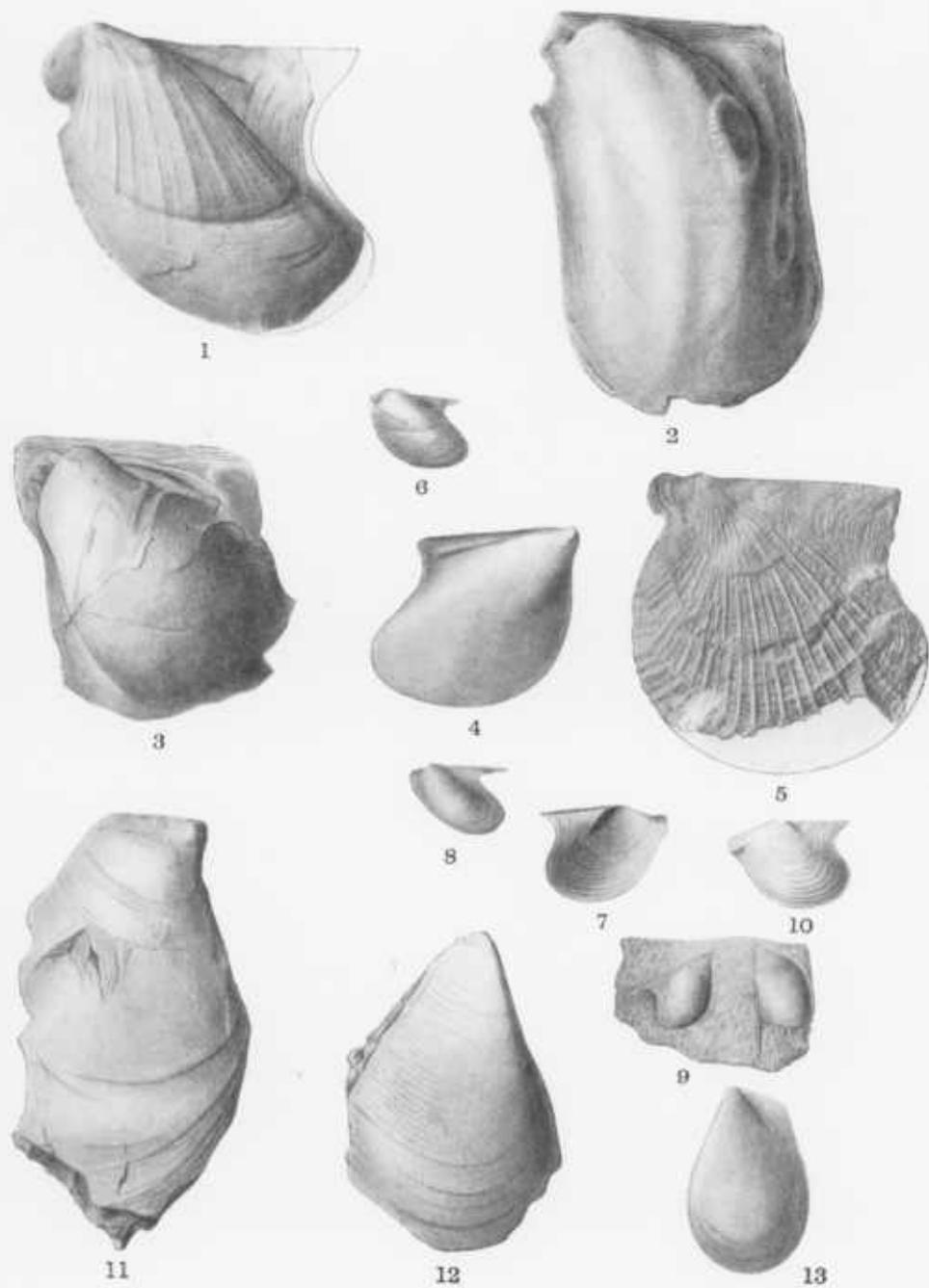
13



14

PLATE XXIX

	PAGE
Figs. 1-4. PTERINEA FLABELLUM (Conrad).....	250
1. Left valve, showing alternation in size of radiating ribs. Evitts Creek.	
2. Internal impression of left valve, showing muscular scar and striated ligamental area. Iron Bridge over Town Creek, north-east of Oldtown.	
3. Internal impression of left valve, broken toward the front; but showing well the striated ligamental area. Flintstone Creek in Gilpin.	
4. Right valve, partly exfoliated. Evitts Creek. Romney formation, Hamilton member.	
Fig. 5. PTERINEA sp. undet.....	251
Left valve showing surface ornamentation. Romney formation, Onondaga member, Little Moccasin Gap, Va. (After Kindle.)	
Fig. 6. LIOPTERIA LEVIS Hall.....	253
Left valve. $\times 2$ . Romney formation, Onondaga member, three miles east of Cumberland. (After Kindle.)	
Figs. 7-10. LEPTODESMA ROGERSI Hall.....	254
7, 8. External impression $\times 2$ and squeeze of left valve. Romney formation, Hamilton member, Evitts Creek.	
9. Block showing two right valves. $\times 2$ .	
10. Left valve. Hamilton formation, New York.	
Figs. 11-13. MYTILARCA (PLETHOMYTILUS) OVIFORMIS (Conrad).....	255
11. An imperfect right valve. 21st Bridge.	
12. Another imperfect right valve. Evitts Creek. Romney formation, Hamilton member.	
13. Left valve of a young shell of elongate form. Hamilton formation, New York.	



MOLLUSCA—PELECYPODA

PLATE XXX

	PAGE
Figs. 1, 2. <i>CONOCARDIUM NORMALE</i> Hall.....	257
Right side and cardinal view of large partial cast of exterior. Romney formation, Hamilton member, Cumberland. (After Hall.)	
Figs. 3, 4. <i>CONOCARDIUM CUMBERLANDIÆ</i> Swartz n. sp.....	257
Right side and ventral view of type. Romney formation, Hamilton member, Williams Road, 3½ miles east of Cumberland.	
Figs. 5-8. <i>ACTINOPTERIA DECUSSATA</i> Hall.....	258
5. Partly exfoliated left valve.	
6. Left valve.	
7. External impression of a portion of a left valve, showing the character of the surface markings. Romney formation, Hamilton member, road east of Pine Hill, about 4 miles north of Oldtown.	
8. A large right valve. Hamilton formation, New York.	
Figs. 9, 10. <i>ACTINOPTERIA BOYDI</i> VAR. <i>GIBBOSA</i> Prosser n. var.....	259
9. Right valve.	
10. Left valve of same specimen. Romney formation, Hamilton member, Town Creek, 4 miles northeast of Oldtown.	
Fig. 11. <i>ACTINOPTERIA</i> sp. ....	260
Left valve, surface markings mostly obliterated over the umbonal region. Romney formation, Hamilton member, Iron Bridge over Town Creek, northeast of Oldtown.	



1



2



3



4



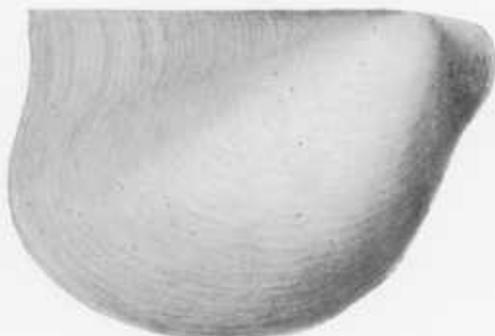
7



6



5



8



9



10



11

MOLLUSCA—PELECYPODA

PLATE XXXI

	PAGE
Figs. 1-5. <i>MODIELLA PYGMÆA</i> (Conrad).....	261
1. Right valve upon which the fine radiating striæ are faintly shown. × 2. Evitts Creek.	
2. External impression of right valve. × 2. Evitts Creek.	
3. Internal impression of left valve, showing anterior muscular scar and oblique sinus. × 1½. Hill 3 miles south of Cumberland in West Virginia.	
4. Cardinal view of same specimen. × 1¼. Romney formation, Hamilton member.	
5. Left valve showing fine radiating striæ. × 2. Hamilton formation, New York.	
Fig. 6. <i>NYASSA ARGUTA</i> Hall (?).....	262
Internal impression of a broken left valve, showing impressions of posterior lateral teeth. Romney formation, Hamilton member, McCoys Ferry.	
Figs. 7-9. <i>NYASSA ARGUTA</i> Hall.....	262
7, 8. Right and left valves.	
9. A squeeze showing the appearance of the interior of the right valve. Hamilton formation, New York.	
Figs. 10, 11. <i>AVICULOPECTEN PRINCEPS</i> (Conrad).....	263
10. A specimen preserving both valves.	
11. A large left valve, much extended posteriorly. Hamilton formation, New York.	
Fig. 12. <i>AVICULOPECTEN</i> sp. ....	266
An incomplete right valve. Romney formation, Hamilton member, near Hancock.	



1



2



3



4



5



6



7



8



9



10



11



12

PLATE XXXII

	PAGE
Figs. 1, 2. <i>AVICULOPECTEN PRINCEPS</i> (Conrad).....	263
1. External impression of a broken left valve.	
2. Left valve with broken margins.	
Romney formation, Hamilton member, Williams Road, ¼ mile east of Queen City Hotel, Cumberland.	
Figs. 3, 4. <i>AVICULOPECTEN EQUILATERA</i> (Hall).....	265
Two left valves showing variation in erectness of the shell. × 2.	
Romney formation, Onondaga member, Blair County, Penna., and Ridgeville, W. Va. (After Kindle.)	
Figs. 5-9. <i>MODIOMORPHA CONCENTRICA</i> (Conrad).....	266
5, 6. Right and left valves. Evitts Creek.	
7, 8. Internal impression of right and left valves. Williams Road, east of Evitts Creek.	
9. Internal impression of right valve elongated by pressure, showing anterior muscular scar. Western Maryland. Romney formation, Hamilton member.	



1



2



6



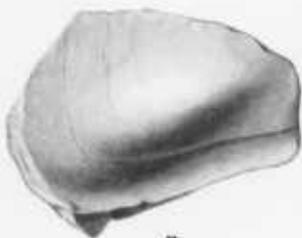
3



4



5



7



9

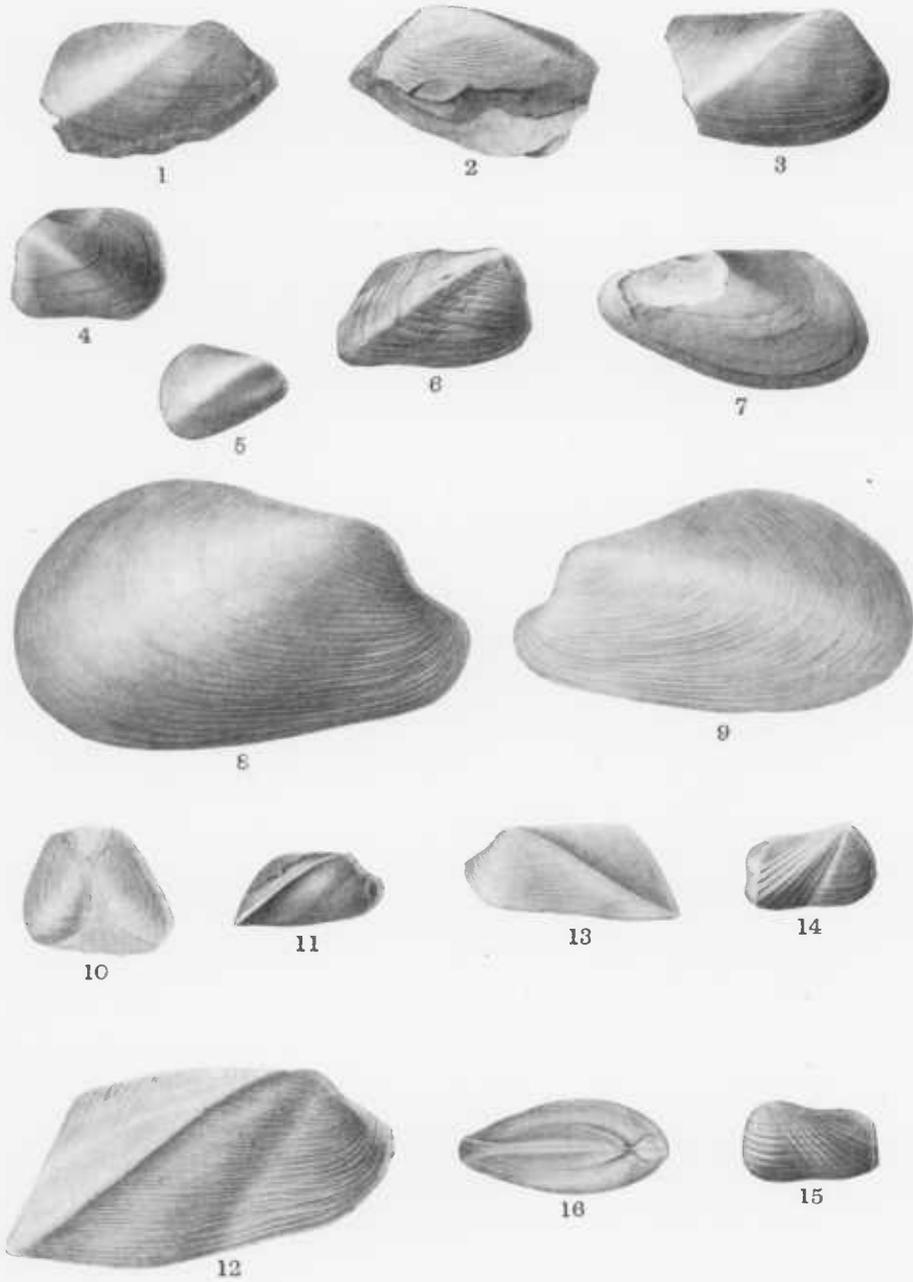


8

MOLLUSCA—PELECYPODA

PLATE XXXIII

	PAGE
Figs. 1-6. <i>MODIOMORPHA SUBALATA</i> (Conrad).....	268
1, 2. Right and left valves.	
3. Right valve.	
4. Left valve of small specimen. × 2.	
5. Probably right valve of young specimen. × 2.	
6. An imperfect right valve.	
Romney formation, Hamilton member, Evitts Creek.	
Fig. 7. <i>MODIOMORPHA MYTILOIDES</i> (Conrad) (?).....	269
Left valve from which umbonal region is broken.	
Romney formation, Hamilton member, Evitts Creek.	
Figs. 8-10. <i>MODIOMORPHA MYTILOIDES</i> (Conrad).....	269
8, 9. Right and left valves.	
10. Young specimen showing both valves.	
Hamilton formation, New York.	
Figs. 11-13. <i>GONIOPHORA HAMILTONENSIS</i> Hall.....	271
11. Partly exfoliated right valve, showing sharp umbonal ridge. Rom-	
ney formation, Hamilton member, Hancock-Harrisonville Road,	
about 2 miles north of Hancock.	
12, 13. Right and left valves. Hamilton formation, New York.	
Figs. 14-16. <i>PHILODELLA RADIATA</i> (Conrad).....	272
14, 15. Right and left valves. Hancock-Harrisonville Road, about 2	
miles north of Hancock.	
16. Cardinal view of a specimen. Cumberland.	
Romney formation, Hamilton member (fig. 16, after Hall).	



MOLLUSCA—PELECYPODA

PLATE XXXIV

	PAGE
Figs. 1-4. <i>CYPRICARDELLA BELLISTRATA</i> (Conrad).....	273
1. Right valve. Evitts Creek.	
2. Interior of left valve (?) with broken anterior end. Evitts Creek.	
3. Left valve. Evitts Creek.	
4. Cardinal view of small specimen preserving both valves. Cumberland. Romney formation, Hamilton member (fig. 4, after Hall).	
Fig. 5. <i>CYPRICARDELLA TENUISTRATA</i> (Hall).....	275
Left valve. Romney formation, Hamilton member, Williams Road, ¼ mile east of Queen City Hotel, Cumberland.	
Figs. 6-10. <i>CYPRICARDINIA INDENTA</i> (Conrad).....	276
6. Right valve. × 2. Evitts Creek.	
7. External (?) impression of right valve. × 2. 21st Bridge.	
8. A squeeze from the same specimen. × 2. Romney formation, Hamilton member.	
9. Right valve showing surface markings.	
10. Left valve. Hamilton formation, New York.	
Figs. 11-14. <i>PARACYCLAS LIRATA</i> Conrad.....	277
11. Right valve of small specimen. Great Cacapon.	
12. Left valve elongated by pressure. McCoys Ferry.	
13, 14. Right and left valves somewhat distorted. Western Maryland. Romney formation, Hamilton member.	
Fig. 15. <i>PARACYCLAS LIRATA</i> Conrad var. (?).....	278
Left valve somewhat broken along the hinge line. Romney formation, Hamilton member, McCoys Ferry.	
Figs. 16, 17. <i>PARACYCLAS TENUIS</i> Hall.....	278
Interior of right valves. × 1½. Romney formation, Hamilton member, Evitts Creek.	
Fig. 18. <i>PALÆOSOLEN MINUTUS</i> Prosser n. sp.....	279
Both valves, ventral margin of left broken. × 1½. Romney formation, Hamilton member, Williams Road, ¼ mile east of Queen City Hotel, Cumberland.	



1



2



3



5



4



7



6



8



9



10



11



12



13



14



15



16



17



18

PLATE XXXV

	PAGE
Figs. 1-5. PLEUROTOMARIA (BEMBEXIA) SULCOMARGINATA Conrad.....	280
1. Ventral view of specimen. Warrior Mountain, east of Rush.	
2. View of spire and upper part of body whorl. Right bank of Potomac, about 3 miles below Cumberland.	
3, 4. External and internal impressions. Western Maryland. Romney formation, Hamilton member.	
5. Dorsal view of specimen, showing surface character. Hamilton formation, New York.	
Figs. 6-8. PLEUROTOMARIA (GYROMA) CAPILLARIA Conrad.....	282
6. Dorsal view, showing surface markings. $\times 1\frac{1}{4}$ .	
7. Body whorl showing the surface markings but shell is exfoliated from the spire. $\times 1\frac{1}{4}$ . Romney formation, Hamilton member, Evitts Creek.	
8. Enlarged specimen, showing surface characters. $\times 2$ . Hamilton formation, New York.	
Figs. 9, 10. PLEUROTOMARIA (TREPOSPIRA) ROTALIA Hall (?).....	283
9. Part of body whorl, showing surface markings. $\times 1\frac{1}{2}$ . National Road, west of Tonoloway Ridge.	
10. Internal impression of body whorl. $\times 1\frac{1}{4}$ . McCoys Ferry. Romney formation, Hamilton member.	
Figs. 11, 12. PLEUROTOMARIA (EURYZONE) ITYS Hall (?).....	284
11. Dorsal view of internal impression. Robinson farm, 2 miles south of Patterson Depot, W. Va.	
12. Ventral view of internal impression. Western Maryland. Romney formation, Hamilton member.	
Fig. 13. PLEUROTOMARIA (EURYZONE) ITYS Hall.....	284
View of an internal impression retaining traces of the surface charac- ters toward the aperture. Hamilton formation, New York.	
Fig. 14. BELLEROPHON (PATELOSTIUM) PATULUS Hall (?).....	287
Dorsal view of smooth internal impression from which the margins are broken. Romney formation, Hamilton member, Western Mary- land.	
Fig. 15. BELLEROPHON (PATELOSTIUM) PATULUS Hall.....	287
Dorsal view of specimen. Hamilton formation, New York.	



1



2



3



4



5



6



7



8



9



11



12



13



10



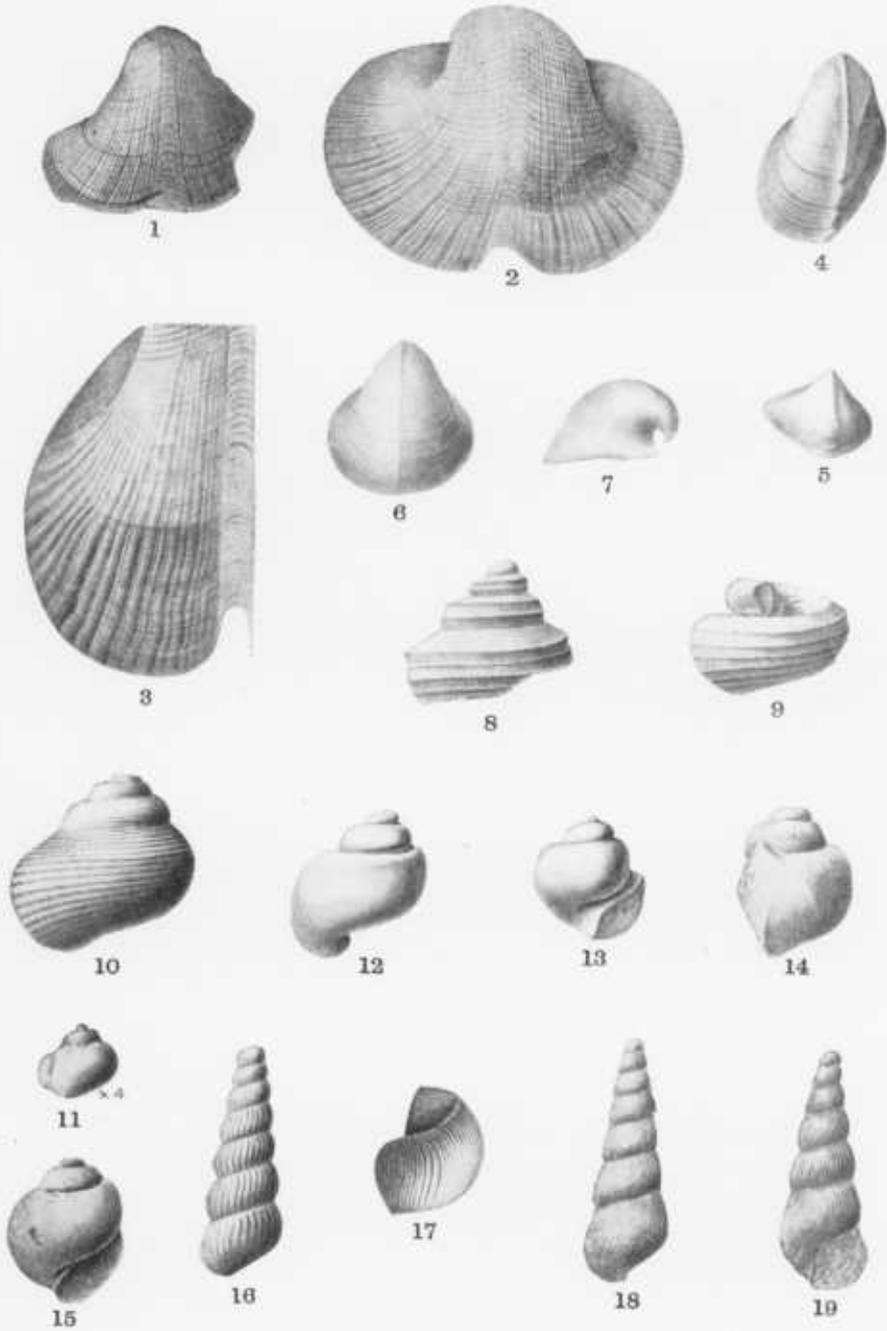
14



15

PLATE XXXVI

	PAGE
Figs. 1-3. <i>BELLEROPHON (BUCANOPSIS) LEDA</i> Hall.....	285
1. Dorsal view, showing surface markings. $\times 1\frac{1}{4}$ . Romney formation, Hamilton member, Evitts Creek.	
2. Dorsal view of specimen with finely preserved surface. $\times 2$ .	
3. View of one side of dorsal surface, showing surface markings. $\times 3$ . Hamilton formation, New York.	
Figs. 4-7. <i>CYRTOLITES (CYRTONELLA) MITELLA</i> Hall.....	288
4. Dorsal view of specimen which is crushed on right side. $\times 1\frac{1}{4}$ .	
5. Dorsal view of smaller specimen which is distorted toward the front. $\times 1\frac{1}{4}$ . Romney formation, Hamilton member, road east of Pine Hill, about 4 miles north of Oldtown.	
6. Dorsal view of partly exfoliated specimen.	
7. Side view of the type, an internal impression. Hamilton formation, New York.	
Figs. 8, 9. <i>CYCLONEMA LIRATUM</i> VAR. <i>GRABAU</i> Prosser n. var.....	290
8. Squeeze from an external impression, showing part of the body whorl, the spire and surface markings. $\times 1\frac{1}{2}$ .	
9. Probably the internal impression of the body whorl of the same specimen. $\times 1\frac{1}{4}$ . Romney formation, Hamilton member, Williams Road, about $3\frac{1}{2}$ miles southeast of Cumberland.	
Fig. 10. <i>CYCLONEMA (?) MARYLANDENSE</i> Prosser n. sp.....	292
Side view, showing the surface markings. Romney formation, Hamilton member, right bank of Potomac River, 4 miles below Cumberland.	
Fig. 11. <i>NATICOPSIS</i> sp. undet. ....	293
Lateral view. $\times 4$ . Romney formation, Onondaga member, Ridgeville, W. Va.	
Figs. 12-15. <i>MACROCHILUS HAMILTONIÆ</i> Hall.....	293
12, 13. Dorsal and ventral views of internal impression. Romney formation, Hamilton member, Western Maryland.	
14, 15. Views of the opposite sides of the type. Hamilton formation, New York.	
Figs. 16-19. <i>LOXONEMA HAMILTONIÆ</i> Hall.....	294
16. Dorsal view, showing strong longitudinal striæ. $\times 1\frac{1}{4}$ . $4\frac{1}{2}$ miles northeast of Oldtown.	
17. Body whorl, showing longitudinal striæ. $\times 2$ . Evitts Creek. Romney formation, Hamilton member.	
18, 19. Dorsal and ventral views of specimen of usual size. Hamilton formation, New York.	



MOLLUSCA—GASTROPODA

PLATE XXXVII

	PAGE
Figs. 1-3. <i>PLATYCERAS ERECTUM</i> Hall (?).....	296
1. Lateral view of partly exfoliated specimen. $\times 1\frac{1}{4}$ .	
2, 3. Two views of exfoliated specimen, wrinkled by crushing toward the margin. $\times 1\frac{1}{4}$ .	
Romney formation, Hamilton member, Hancock-Harrisonville Road, about 2 miles north of Hancock.	
Figs. 4, 5. <i>PLATYCERAS ERECTUM</i> Hall.....	296
Two views of specimen from Hamilton formation of New York.	
Fig. 6. <i>PLATYCERAS</i> cf. <i>SYMMETRICUM</i> Hall.....	297
Dorsal view of partly exfoliated specimen. Romney formation, Hamil- ton member, Evitts Creek.	
Figs. 7-12. <i>DIAPHOROSTOMA LINEATUM</i> (Conrad).....	298
7. Lateral view.	
8. Enlarged portion of same to show surface markings. $\times 7$ .	
Romney formation, Hamilton member, Ernstville.	
9. The aperture and spire of a symmetrical specimen.	
10. Lateral view of the same.	
11. Side view of a specimen preserving the surface in great perfection.	
12. Enlargement of the surface of the preceding.	
Hamilton formation, New York.	
Figs. 13-15. <i>PLATYSTOMA</i> cf. <i>EUOMPHALOIDES</i> Conrad.....	299
Upper, side and lower views. Hamilton formation, New York.	
Fig. 16. (?) <i>GASTROPOD</i> .	
Squeeze from external impression (?). $\times 10$ . Romney formation, Hamilton member, road east of Pine Hill, about 4 miles north of Oldtown.	
Figs. 17-20. <i>STYLIOLINA FISSURELLA</i> (Hall).....	300
17. Lateral view of small specimen. $\times 6$ .	
18. Similar view of larger specimen. $\times 6$ .	
Romney formation, Hamilton member, Iron Bridge over Town Creek, northeast of Oldtown.	
19. Specimen strongly striated longitudinally. $\times 6$ .	
20. Specimen showing transverse and longitudinal striæ. $\times 6$ .	
Marcellus formation, New York.	
Fig. 21. <i>TENTACULITES ATTENUATUS</i> Hall.....	301
Specimen showing internal impression for larger end and external impression for the remainder. $\times 5$ . Romney formation, Hamil- ton member, National Road, west of Tonoloway Rldge.	
Figs. 22-25. <i>TENTACULITES BELLULUS</i> Hall.....	302
22. External impression. $\times 3$ .	
23. Same enlarged to show annulations and fine transverse striæ. $\times 8$ .	
Romney formation, Hamilton member, Iron Bridge over Town Creek, northeast of Oldtown.	
24. A specimen showing the general features of the species.	
25. Enlargement of the same showing annulations and encircling striæ.	
Hamilton formation, New York.	



1



2



3



4



5



6



7



8



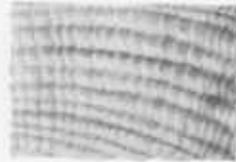
9



10



11



12



13



14



15



16



17



18



25



19



20



24



23



22



21

PLATE XXXVIII

	PAGE
Figs. 1-3. <i>TENTACULITES BELLULUS</i> VAR. <i>POTOMACENSIS</i> Prosser n. var. ....	303
1. View of external impression. $\times 1\frac{1}{2}$ .	
2. Squeeze of same, showing the external appearance of the species. $\times 1\frac{1}{2}$ .	
3. Same specimen enlarged to show annulations and transverse striæ. $\times 4$ .	
Romney formation, Hamilton member, McCoys Ferry.	
Fig. 4. <i>CONULARIA UNDULATA</i> Conrad. ....	304
Side view of shell. Hamilton formation, New York.	
Figs. 5-8. <i>COLEOLUS TENUICINCTUS</i> Hall. ....	305
5. Two specimens, showing concentric striæ; median longitudinal groove due to fracture.	
6. Part of right hand specimen of preceding enlarged, showing appear- ance of transverse striæ. $\times 3$ .	
Romney formation, Hamilton member, Evitts Creek.	
7. An imperfect specimen.	
8. A fragment enlarged.	
Hamilton formation, New York.	
Fig. 9. <i>BACTRITES ACICULUS</i> .....	320
Fragment of tube. Romney formation, Onondaga member, Sassin, Va. (After Kindle.)	
Figs. 10, 11. <i>ORTHO CERAS BEBRYX</i> Hall (?) .....	307
10. Internal impression of part of an individual. Oldtown Road near Cumberland.	
11. Enlargement showing surface markings. $\times 4$ . Great Cacapon. Romney formation, Hamilton member.	
Fig. 12. <i>ORTHO CERAS BEBRYX</i> Hall. ....	307
A much compressed and weathered fragment, with the siphuncle ex- posed. Hamilton formation, New York.	



1



2



3



5



7



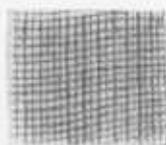
6



8



9



11



12



10



4

MOLLUSCA—GASTROPODA AND CEPHALOPODA

PLATE XXXIX

	PAGE
Figs. 1, 2. <i>ORTHO CERAS SUBULATUM</i> Hall (?).....	308
1. Partly exfoliated living chamber.	
2. Septum of the same, showing position of siphuncle. Romney formation, Hamilton member, right bank of Potomac, 3 miles below Cumberland.	
Figs. 3, 4. <i>ORTHO CERAS SUBULATUM</i> Hall.....	308
3. The apical portion of a specimen, showing the regular increase in the depth of the air-chambers from the apex to the larger ex- tremity.	
4. A septum, showing the position of the siphuncle. Hamilton formation, New York.	
Figs. 5-8. <i>ORTHO CERAS CONSTRICTUM</i> Vanuxem.....	309
5. Partly exfoliated living chamber. Romney formation, Hamilton member, Oldtown Road near Cumberland.	
6. A fragment retaining a portion of the living chamber and twenty- one air-chambers.	
7. A fragment of the living chamber, with two of the attached air- chambers.	
8. A septum, showing position of siphuncle. Hamilton formation, New York.	
Fig. 9. <i>ORTHO CERAS</i> cf. <i>EXILE</i> Hall.....	310
Specimen showing seven air-chambers. Romney formation, Hamilton member, Evitts Creek.	
Figs. 10, 11. <i>ORTHO CERAS EXILE</i> Hall.....	310
10. Living chamber with two air-chambers.	
11. Septum of same, showing the circular, transverse section of the tube and the eccentric position of the siphuncle. Hamilton formation, New York.	



MOLLUSCA—CEPHALOPODA

PLATE XL

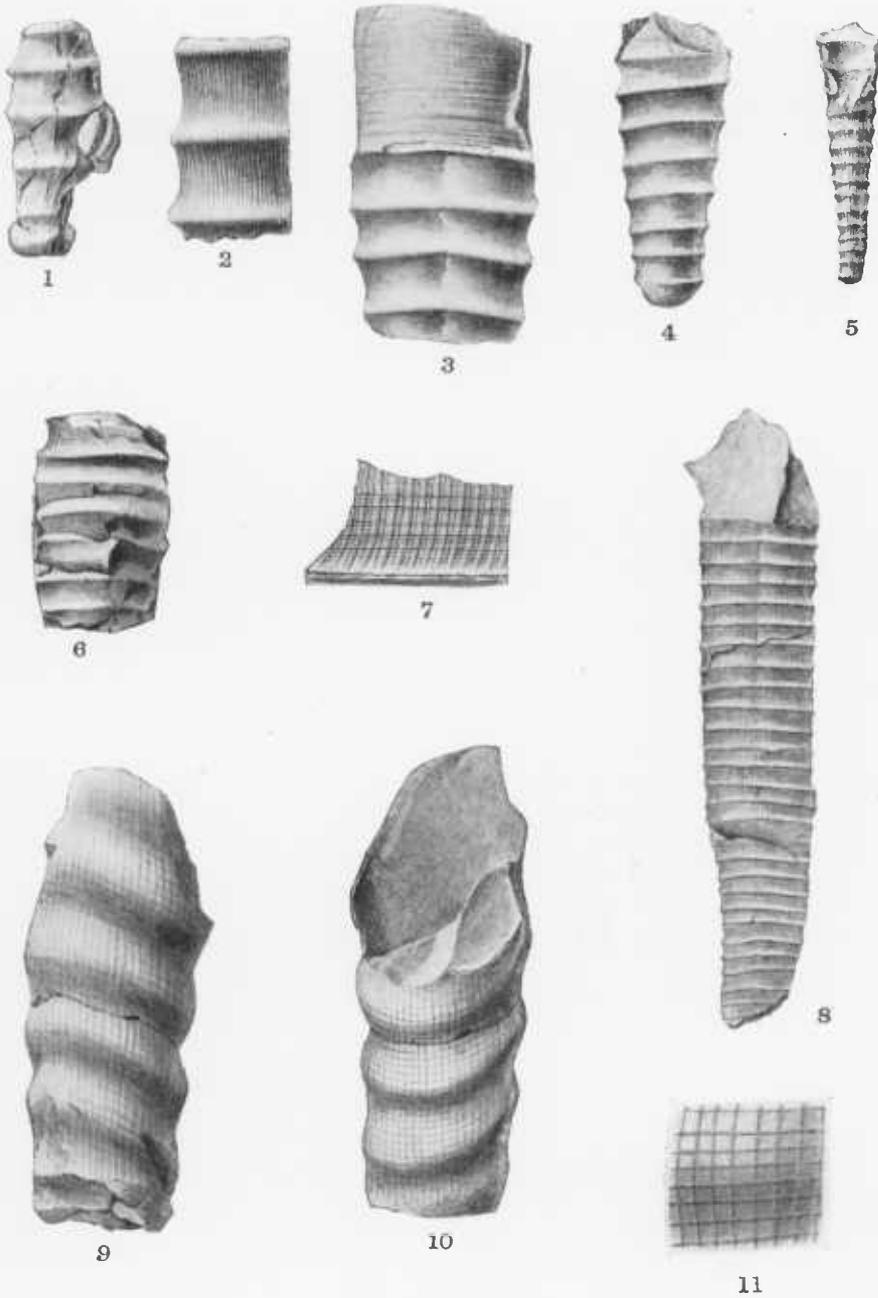
	PAGE
Figs. 1-4. ORTHOCERAS TELAMON Hall (?).....	311
1. Internal impression of living chamber.	
2. Septum of preceding, showing excentric siphuncle.	
3. A specimen showing five air-chambers.	
4. Septum of preceding, showing excentric siphuncle.	
Romney formation, Hamilton member, Robinsons farm, 2 miles south of Patterson Depot, W. Va.	
Figs. 5, 6. ORTHOCERAS TELAMON Hall.....	311
5. Small fragment showing depth of air-chambers and gradual en- largement of tube.	
6. A septum, showing very excentric position of siphuncle. Hamilton formation, New York.	
Fig. 7. ORTHOCERAS EMACERATUM Hall (?).....	313
Internal impression, showing six air-chambers. Romney formation, Hamilton member, right bank of Potomac, 3 miles below Cum- berland.	
Fig. 8. ORTHOCERAS CF. AULAX Hall.....	313
Portion of living chamber, showing surface markings. Romney forma- tion, Hamilton member, road east of Pine Hill, about 4 miles north of Oldtown.	
Fig. 9. ORTHOCERAS AULAX Hall.....	313
Fragment of living chamber, showing the prominent, regular trans- verse furrows and ridges of the surface. Hamilton formation, New York.	



MOLLUSCA—CEPHALOPODA

PLATE XLI

	PAGE
Figs. 1-5. <i>SPYRO CERAS CROTALUM</i> (Hall).....	314
1. Fragment, showing the prominent annulations and longitudinal striæ.	
2. Enlargement of same. × 2. Romney formation, Hamilton member, Western Maryland.	
3. Internal impression of portion of living chamber, showing absence of annulations near aperture and striate surface.	
4. A small, septate fragment, preserving the characteristic fine, longitudinal striæ over the exterior of the tube.	
5. A small, slightly compressed specimen, showing the surface markings and the increase in prominence of the annulations toward the larger end. Hamilton formation, New York.	
Figs. 6-8. <i>SPYRO CERAS NUNTIVM</i> Hall.....	316
6. Partly exfoliated fragment, showing the surface striæ.	
7. Shell of same enlarged, showing surface striæ. × 6. Romney formation, Hamilton member, right bank of Potomac, 3 miles below Cumberland.	
8. A compressed specimen showing annulations and longitudinal striæ. Hamilton formation, New York.	
Figs. 9-11. <i>SPYRO CERAS CLARKEI</i> Prosser n. sp.....	317
9, 10. Two views of fragment, showing five annulations and surface markings.	
11. Same enlarged, showing the longitudinal and concentric striæ. × 3. Romney formation, Hamilton member, Ernstville.	



MOLLUSCA—CEPHALOPODA

PLATE XLII

	PAGE
Figs. 1, 2. Cf. GOMPHOCERAS PINGUE Hall.....	318
1. Part of living chamber.	
2. Septum of preceding, showing position of siphuncle. Romney formation, Hamilton member, Western Maryland.	
Fig. 3. GOMPHOCERAS PINGUE Hall.....	318
Fragment showing ventricose form and curvature of living chamber toward aperture. Hamilton formation, New York.	
Fig. 4. BACTRITES ACICULATUS (Hall).....	319
Part of an individual. $\times 1\frac{1}{2}$ . Romney formation, Hamilton member, 21st Bridge.	
Fig. 5. BACTRITES ACICULUM Hall.....	320
Shell slightly crushed. Genesee formation, New York.	
Fig. 6. AGONIATITES EXPANSUS (Vanuxem).....	321
Outline figure showing character of surface striæ. Romney formation, Onondaga member, Cumberland. (After Kindle.)	
Figs. 7, 8. PARODICERAS DISCOIDEUM (Conrad).....	323
Lateral and ventral views. Marcellus formation, New York.	
Fig. 9. CYPHESIS CF. STEPHANOPHORA Hall.....	326
Fragmentary glabella. $\times 5$ . Romney formation, Onondaga member, Berkeley Springs, W. Va. (After Kindle.)	



1



5



3



9



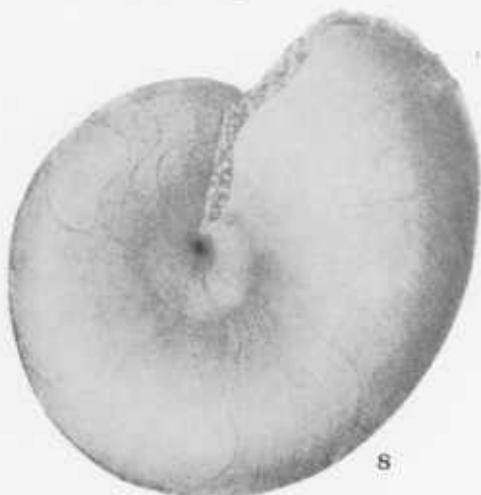
2



7



4



8



6

PLATE XLIII

	PAGE
Figs. 1-7. HOMALONOTUS DEKAYI (Green).....	328
1. A young, distinctly trilobate and nearly entire individual.	
2. An enrolled and uncompressed individual.	
3. The hypostoma.	
4. An enlargement of the under surface. × 5. Hamilton formation, New York.	
5. Dorsal view of a pygidium.	
6. A smaller and somewhat crushed pygidium, showing the reflexed apex.	
7. An enlargement of a portion of the surface of same. × 10. Romney formation, Hamilton member, road east of Pine Hill, about 4 miles north of Oldtown.	
Figs. 8-12. PHACOPS RANA (Green).....	329
8. Dorsal view of cephalon. 21st Bridge.	
9. The eye of same. × 3.	
10. Pygidium. × 2. Evitts Creek. Romney formation, Hamilton member.	
11. A small individual.	
12. The eye of a slightly weathered specimen enlarged. Hamilton formation, New York.	
Figs. 13-15. PHACOPS CRISTATA Hall.....	331
13. Cephalon and part of the thorax of an enrolled specimen, showing axial and genal spines. Alinda, Penna.	
14. Lateral view of an enrolled specimen with a partly crushed glabella, showing genal spine base. Alinda, Penna.	
15. Fragmentary thorax and pygidium, showing axial spines. Ridgeville, W. Va. Romney formation, Onondaga member. (After Kindle.)	
Figs. 16, 17. PHACOPS CRISTATA VAR. PIPA Hall.....	332
16. Fragmentary enrolled thorax. Alinda, Penna.	
17. Pygidium, showing duplicate character of pleural annulations. Near New Bloomfield, Penna. Romney formation, Onondaga member. (After Kindle.)	



1



2



3



4



5



6



7



8



9



10



11



12



13



14



16



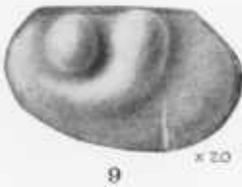
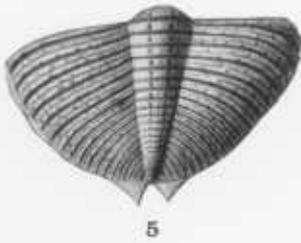
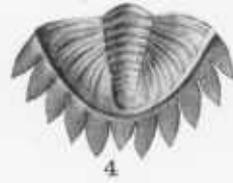
17



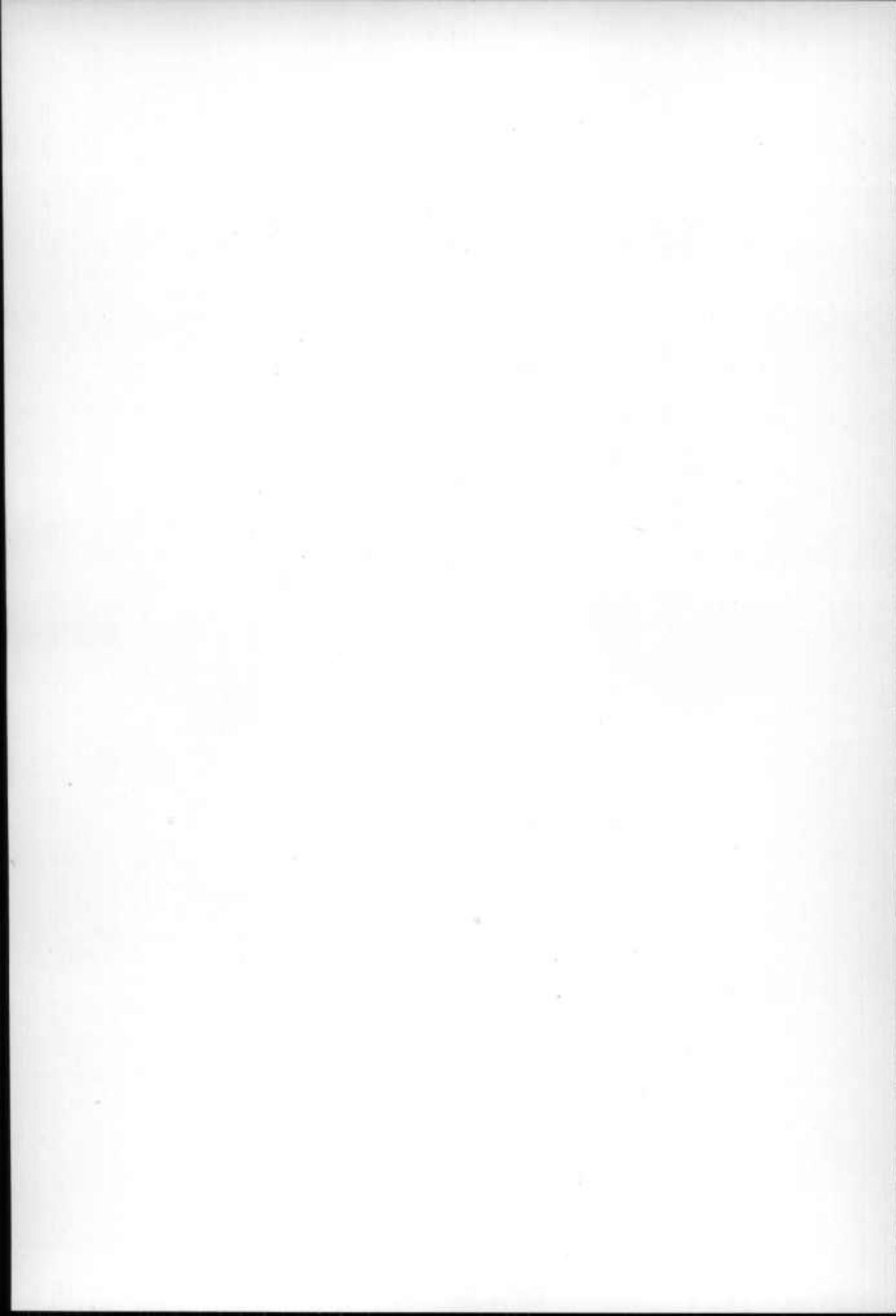
15

PLATE XLIV

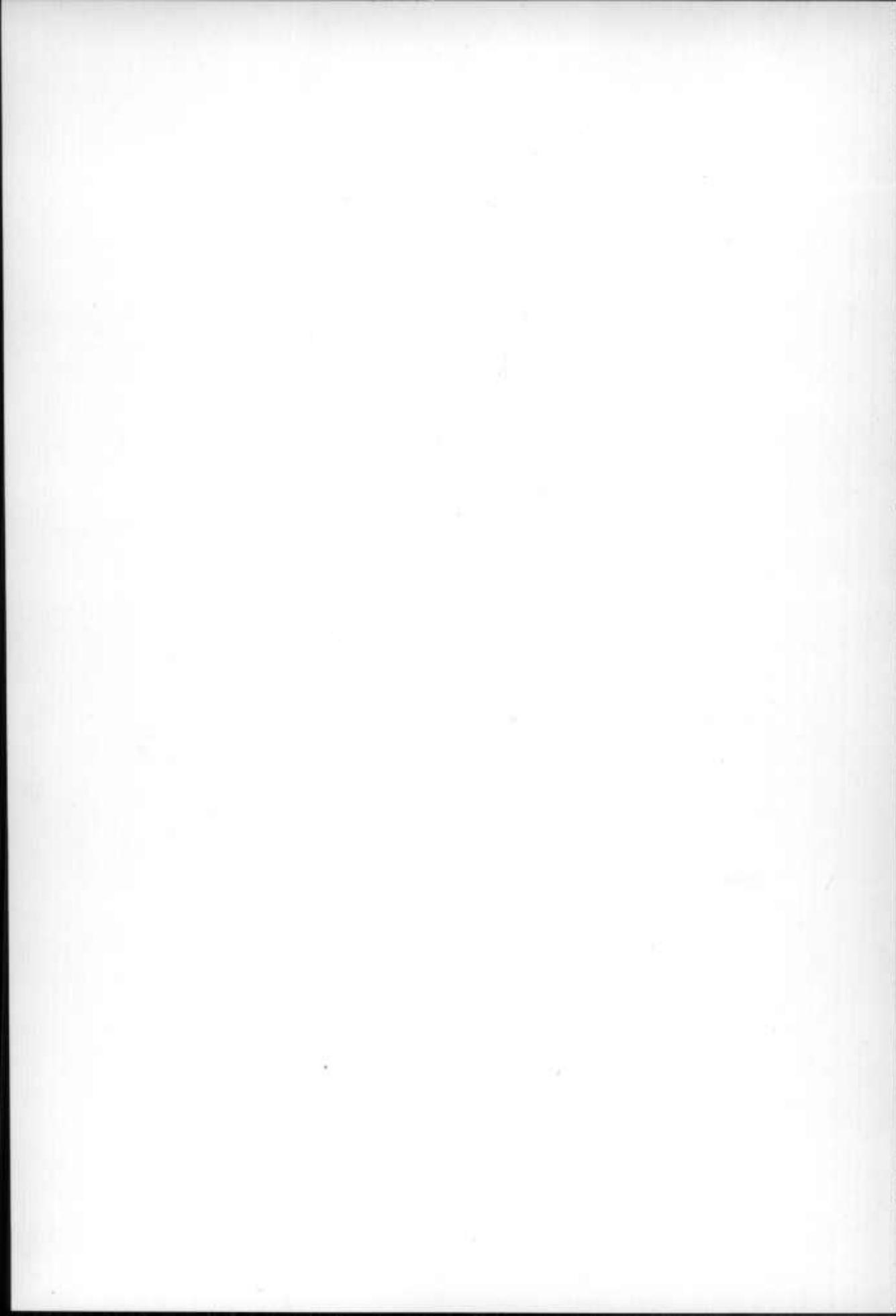
	PAGE
Figs. 1-4. DALMANITES (CRYPHÆUS) BOOTHII (Green).....	333
1. Partly exfoliated pygidium with marginal spines. $\times 1\frac{1}{2}$ .	
2. Another partly exfoliated and smaller pygidium. $\times 2$ .	
3. A pygidium and part of one side of a thorax. $\times 1\frac{1}{2}$ .	
Romney formation, Hamilton member, Evitts Creek.	
4. Internal surface of a pygidium, in which the spines are broad and flat. Hamilton formation, New York.	
Fig. 5. DALMANITES MARYLANDICUS Prosser n. sp.....	334
Partly exfoliated pygidium, showing the pustulose surface and two spines at the apex. Romney formation, Hamilton member, Ernstville.	
Fig. 6. LEPERDITIA ? SUBROTUNDA.....	335
Right valve. $\times 20$ . Romney formation, Onondaga member, Little Moccasin Gap, Va. (After Kindle.)	
Figs. 7, 8. BOLLIA UNGULA Jones.....	336
7. Cast of a left valve. $\times 20$ . Rees Tannery, Mineral County, W. Va.	
8. Dorsal view of a slightly distorted specimen. $\times 20$ . Berkeley Springs, Ridgeville, W. Va.	
Romney formation, Onondaga member. (After Kindle.)	
Fig. 9. BOLLIA OBESA Ulrich.....	337
Cast of left valve. $\times 20$ . New Bloomfield, Penna. Romney formation, Onondaga member. (After Kindle.)	



ARTHROPODA—TRILOBITA AND OSTRACODA



DEVONIAN  
UPPER



## NOTE

The following plates (Plates XLV to LXXIII) illustrate the Systematic Paleontology of the Upper Devonian of Maryland.

PLATE XLV

	PAGE
Figs. 1, 2. <i>ZAPHRENTIS MARYLANDICUS</i> n. sp. ....	539
1. Cast of calyx of type specimen as seen from below.	
2. Side view of preceding showing its relation to outline of corallite. Jennings formation, Chemung member, National Road, Polish Mountain, 2714. <sup>1</sup>	
Figs. 3-6. <i>ZAPHRENTIS CHEMUNGENSIS</i> n. sp. ....	540
3. Side view of cast of interior of calyx, showing its relation to shape of corallium.	
4. Lower surface of preceding.	
5. View of type specimen, similar to fig. 3.	
6. Lower surface of same individual. Jennings formation, Chemung member, Polish Mountain, 2714.	
Figs. 7, 8. <i>HELIOPHYLLUM SCRUTARIUM</i> n. sp. ....	540
7. Branching corallum showing calyxes.	
8. Specimen similar to preceding. Jennings formation, Chemung member ?, Sideing Hill Creek, Washington County.	
Fig. 9. <i>FAVOSITES</i> sp. ....	541
A small corallium showing size of the cells. Jennings formation, Che- mung member ?, Sideing Hill Creek, Washington County.	
Figs. 10, 11. <i>AULOPORA REPENS</i> Knorr and Walch. ....	542
10. Corallium attached to shell of <i>Rhipidomella vanuxemi</i> .	
11. Corallum similarly attached, showing some difference in propor- tion of corallites. Jennings formation, base of Parkhead member, hill-top south of Potomac River, 2½ miles southeast of Cumberland.	

<sup>1</sup> The figures following localities indicate the altitude in feet above the base of the Jennings formation at which the specimens were found.



3



1



4



5



2



6



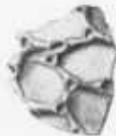
7



8



9



10



11

COELENTERATA—ANTHOZOA

PLATE XLVI

	PAGE
Figs. 1, 2. CLADOCHONUS HUMILIS n. sp.....	542
1. Corallum, natural size. Hancock-Harrisonville Road, 2 miles north of Hancock, 725.	
2. Cast of interior of corallite, showing imprints of spinules. × 5. National Road, east of Hancock, 690. Jennings formation, Woodmont member, Ithaca fauna.	
Figs. 3, 4. PALEASTER CLARKI n. sp.....	543
3. Ambulacral surface, showing the character of the thecal plates, and some of the adambulacral plates. The mouth parts are not clearly retained. × 1½.	
4. Abactinal surface, showing the character of the three rows of plates on the arms, the fine intercalary plates of the median row and the large and mammillated body plates. × 1½. Jennings formation, Chemung member, near Oakland.	
Fig. 5. SPIROBIS GYRUS n. sp.....	544
An attached tube, showing the tubercled surface. × 5. Jennings formation, Chemung member ?, Sideling Hill Creek, Allegany County.	
Fig. 6. PTERIDICHNITES BISERIATUS n. sp.....	545
Track made by animal. Jennings formation, Woodmont member, Naples fauna, Woodmont.	



COELENTERATA—VERMES—ECHINODERMATA

PLATE XLVII

	PAGE
Figs. 1-5. <i>LINGULA OHERNI</i> n. sp. ....	546
1. Small shells probably young of this species.	
2. Single valve from preceding group. × 6.	
3-4. Exteriors of valves showing slight differences of form.	
5. Interior of valve.	
Jennings formation, Parkhead member, Williams Road, 3½ miles east of Cumberland, 1393.	
Figs. 6, 7. <i>LINGULA LIGEA</i> Hall. ....	547
6. Exterior of valve. × 3.	
7. Exterior of valve which differs slightly in form. × 3.	
Jennings formation, Woodmont member, National Road, east of Hancock, 1564 to 1599.	
Fig. 8. <i>LINGULA SPATULATA</i> Vanuxem. ....	548
Exterior of valve. × 6. Jennings formation, Woodmont member, Ithaca fauna, National Road, east of Hancock, 1149 to 1274.	
Figs. 9, 10. <i>ORBICULOIDEA</i> cf. <i>MEDIA</i> (Hall) ....	549
9. Dorsal valve. Chemung formation, New York.	
10. Dorsal valve somewhat distorted. Jennings formation, Parkhead member, Williams Road, 3½ miles east of Cumberland, 1393.	
Figs. 11-13. <i>CRAINELLA HAMILTONIE</i> Hall. ....	549
11. Cast of interior of dorsal valve. The vascular markings are visible upon cast, but are not shown in figure. Jennings formation, Parkhead member, Williams Road, Polish Mountain, 1660.	
12, 13. Exterior and cast of interior of dorsal valve. Jennings forma- tion, Chemung member, Ellerslie, Penna., 1474.	
Fig. 14. <i>STROPHEODONTA DEMISSA</i> (Conrad) ....	551
Dorsal view of shell. Jennings formation, Woodmont member, Ithaca fauna, Hancock-Harrisonville Road, 2 miles north of Hancock, 882.	
Figs. 15-18. <i>STROPHEODONTA MAYNARDI</i> n. sp. ....	551
15. Ventral valve of type.	
16. Dorsal valve.	
17. Enlargement of cast of portion of interior of dorsal valve. × 2.	
18. Enlargement of a portion of a cast of the interior of the ventral valve showing hinge and muscular scars. × 2.	
Jennings formation, Chemung member, Town Creek, 2391.	



1



2



3



4



5



6



7



8



9



10



11



12



13



14



15



18



17



16

PLATE XLVIII

	PAGE
Figs. 1-4. <i>LEPTOSTROPHIA PERPLANA</i> VAR. <i>NERVOSA</i> (Hall).....	552
1. The interior of a ventral valve.	
2. Ventral valve showing the character of the surface.	
3. Internal cast of an average ventral valve showing muscular scars and denticulate hinge.	
4. Interior of the dorsal valve showing the double cardinal process, muscular fulcra, and pustulose patches about the muscular area. Jennings formation, Chemung member, from localities near Deer Park and Oakland.	
Figs. 5, 6. <i>LEPTOSTROPHIA PERPLANA</i> VAR. <i>ALTERNATA</i> n. var.....	553
5. Cast of exterior of ventral valve, hinge-line imperfect.	
6. Enlargement of striae. $\times 5$ . Jennings formation, Chemung member, Town Creek, 2391.	
Fig. 7. <i>LEPTOSTROPHIA INTERSTRIALIS</i> (Vanuxem).....	554
Ventral valve. Striae of shell are less regular than shown and somewhat nodose. Jennings formation, Woodmont member, Ithaca fauna, National Road, east of Millstone, 795.	
Figs. 8-17. <i>DOUVILLINA CAYUTA</i> (Hall).....	555
8. A small ventral valve of average proportions.	
9, 10. Two broader ventral valves.	
11. External cast of dorsal valve.	
12. Dorsal valve.	
13. Interior of ventral valve showing the clearly defined brachial depressions in front of the muscle scars.	
14. A characteristic internal cast of the ventral valve showing muscular scars and crenulate hinge.	
15. Internal cast of a larger ventral valve.	
16. Internal cast of ventral valve.	
17. Enlargement of the cardinal portion of the dorsal valve. Jennings formation, Chemung member, Deer Park, Oakland and Altamont.	



1



4



2



5



3



6



7



11



10



8



15



12



13



9



16



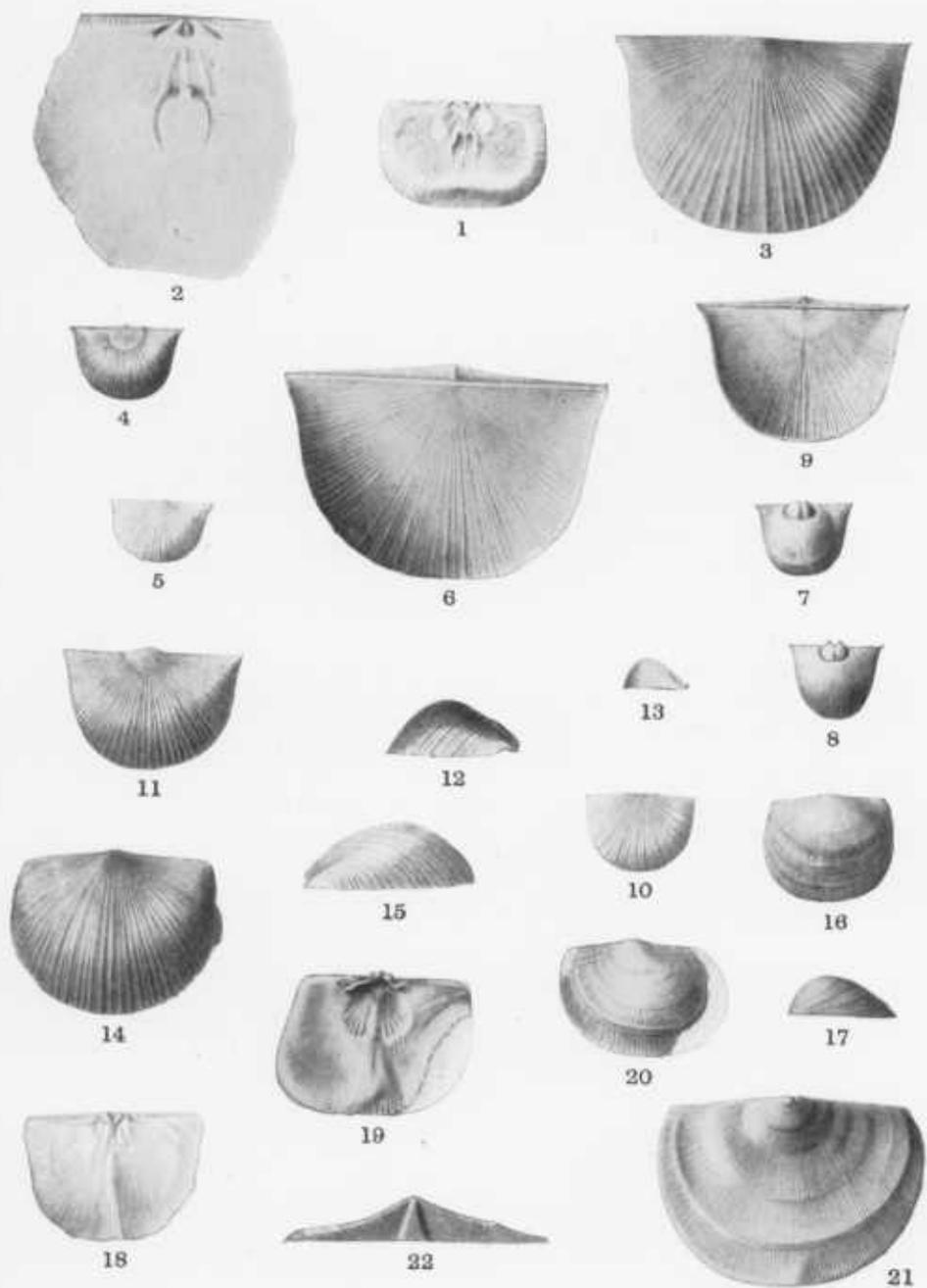
17



14

PLATE XLIX

	PAGE
Figs. 1, 2. <i>DOUVILLINA CAYUTA</i> (Hall).....	555
1. Interior of dorsal valve.	
2. Enlargement of internal cast of dorsal valve. × 2. Jennings formation, Chemung member, Oakland and Deer Park.	
Figs. 3-13. <i>DOUVILLINA CAYUTA</i> VAR. <i>GRACILIORA</i> N. VAR.....	556
3. Ventral valve. × 3.	
4. Ventral valve represented somewhat too concave at the umbo.	
5. Ventral valve.	
6. Dorsal view of shell. × 3.	
7, 8. Internal casts of ventral valves.	
9. Dorsal view of a larger specimen. × 2.	
10. Ventral valve similar to fig. 1.	
11, 12. Upper and profile views of a characteristic ventral valve. × 2.	
13. Profile view of ventral valve. Jennings formation, Chemung member, Deer Park and Oak- land.	
Figs. 14-17. <i>DOUVILLINA ARCUATA</i> (Hall).....	557
14, 15. Upper and profile views of a typical ventral valve. × 2. From Upper Devonian of Lime Creek, Iowa. (Introduced for com- parison with following.)	
16, 17. Upper and profile views of a ventral valve believed to be of this species. Jennings formation, Chemung member, National Road, 6 miles west of Frostburg.	
Fig. 18. <i>STROPHONELLA</i> CF. <i>REVERSA</i> (Hall).....	557
The interior of a dorsal valve showing the reversed convexity, cardinal process, hinge and median sinus. Jennings formation, Che- mung member, Trout River, near Oakland.	
Figs. 19-22. <i>SCHUCHERTELLA CHEMUNOENSIS</i> (Conrad).....	559
19. Interior of small dorsal valve. Deer Park.	
20. Dorsal valve. Wills Creek Station.	
21, 22. Upper and cardinal views of a ventral valve. Two miles east of Oakland. Jennings formation, Chemung member.	



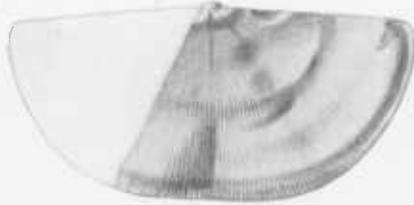
MOLLUSCOIDEA—BRACHIOPODA

PLATE L

	PAGE
Figs. 1-3. <i>SCHUCHERTELLA CHEMUNGENSIS</i> (Conrad).....	559
1. Dorsal valve. Deer Park.	
2. Dorsal valve showing impress of cardinal process. Top of Polish Mountain.	
3. Internal cast of a very broad ventral valve. Near Deer Park. Jennings formation, Chemung member.	
Fig. 4. <i>SCHUCHERTELLA ELLIPTICA</i> n. sp.....	560
Cast of interior of ventral valve. Jennings formation, Chemung member, Town Creek, 4631.	
Fig. 5. <i>SCHUCHERTELLA</i> (?) <i>PONDEROSA</i> n. sp.....	560
Cast of interior of a distorted ventral valve showing muscular scars. Jennings formation, Chemung member, National Road, east of Millstone, 2444.	
Figs. 6-10. <i>CHONETES LEPIDIFORMIS</i> n. sp.....	561
6. Ventral valve retaining long cardinal spines and showing the surface characters. × 3. National Road, Polish Mountain.	
7. Internal cast of ventral valve. × 2. Same locality as preceding.	
8. Very large ventral valve. × 2.	
9. Internal cast of ventral valve. × 3.	
10. More transverse ventral valve. × 3. Figs. 8, 9, and 10 are from National Road, east of Millstone. Jennings formation, Parkhead member.	
Figs. 11-13. <i>CHONETES SCITULUS</i> Hall.....	563
11. Ventral valve. × 2. Near base of Parkhead member, cut of Baltimore and Ohio Railroad, Rocky Run, 7 miles southeast of Cumberland.	
12. Cast of interior of ventral valve showing papillose surface. × 2. Same locality.	
13. Ventral valve having finer striæ. Williams Road, Polish Mountain, 1422. Jennings formation, Parkhead member.	
Figs. 14-18. <i>CHONETES OAKLANDENSIS</i> n. sp.....	562
14-16. Three ventral valves. × 2.	
17, 18. Two dorsal valves. × 2. Jennings formation, Chemung member, Green Glade Run, near Deer Park.	
Fig. 19. <i>CHONETES ROWEI</i> n. sp.....	563
Ventral valve showing irregular bifurcating spinulose plications. × 3. National Road, east of Millstone. Jennings formation, Parkhead member.	
Figs. 20-22. <i>PRODUCTELLA LACHRYMOSA</i> (Conrad).....	564
20. Ventral valve of typical form. Sideling Hill Creek, 2½ miles above mouth, 1700.	
21. Ventral valve of small individual. Williams Road, Polish Mountain, 1660.	
22. Ventral valve upon which spines are somewhat closer than usual. Same locality as preceding. Jennings formation, Parkhead member.	



1



3



2



5



4



6



7



9



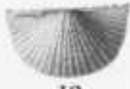
10



8



11



12



13



14



15



16



17



18



20



21



19



22

PLATE LI

	PAGE
Figs. 1-3. <i>PRODUCTELLA LACHRYMOSA</i> (Conrad).....	564
1. Small cast of ventral valve.	
2. Ventral valve.	
3. Sculpture cast of ventral valve.	
Jennings formation, Chemung member, top of Polish Mountain.	
Figs. 4-9. <i>PRODUCTELLA LACHRYMOSA</i> VAR. <i>MARYLANDICA</i> n. var.....	565
4. A large ventral valve which differs somewhat from the remaining specimens. Williams Road, Polish Mountain, 2042.	
5, 6. Interiors of dorsal valves.	
7-9. Ventral valves showing sparsely spinulose surface. Polish Mountain.	
Jennings formation, Chemung member.	
Figs. 10-12. <i>PRODUCTELLA LACHRYMOSA</i> (Conrad) var.....	565
10, 11. Ventral valves.	
12. Portion of surface of valve shown in fig. 10, enlarged $\times 5$ .	
Jennings formation, Chemung member, $3\frac{1}{4}$ miles south of Oakland.	
Figs. 13-15. <i>PRODUCTELLA SPECIOSA</i> Hall.....	566
13. Ventral valve. Hancock-Harrisonville Road, 2 miles north of Hancock, 1213.	
14. Ventral valve showing spinules. Woodmont, 1067.	
15. Dorsal valve. National Road, east of Millstone, 795.	
Jennings formation, Woodmont member, Ithaca fauna.	
Figs. 16-19. <i>PRODUCTELLA HYSTRICULA</i> (Hall).....	567
16, 17. Dorsal valves.	
18. Ventral valve.	
19. Ventral valve showing spinules.	
Chemung formation, New York.	
Fig. 20. <i>PRODUCTELLA NAVICELLIFORMIS</i> n. sp.....	567
Ventral valve of type. Jennings formation, Parkhead member, Town Creek, 2228.	
Figs. 21-23. <i>PRODUCTUS</i> ( <i>MARGINIFERA</i> ?) <i>HALLANUS</i> Walcott.....	568
21, 22. Ventral and dorsal views of a typical specimen from the Upper Devonian of Lime Creek, Iowa. $\times 2$ .	
23. External cast of the dorsal valves showing the lamellose, spineless surface.	
Jennings formation, Chemung member, Green Glade Run, near Deer Park.	



1



2



3



4



7



8



5



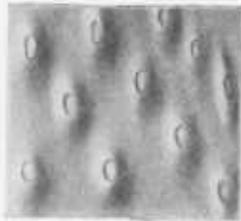
6



9



10



12



11



13



14



15



16



18



17



19



20



21



22



23

PLATE LII

	PAGE
Figs. 1-4. DALMANELLA TIOGA (Hall).....	569
1. Small ventral valve.	
2. Cast of interior of ventral valve.	
3. Cast of interior of dorsal valve showing muscular scars.	
4. Portion of surface of preceding. × 4.	
Jennings formation, Chemung member, Ellerslie, Penna.	
Figs. 1, 2, at 1316. Figs. 3, 4, at 1474.	
Fig. 5. DALMANELLA CARINATA (Hall).....	570
Cast of interior of dorsal valve. Jennings formation, Chemung member, west of Ellerslie, Penna.	
Fig. 6. DALMANELLA sp. ....	572
Ventral valve. × 3. Jennings formation, Chemung member, National Road, Polish Mountain.	
Figs. 7-11. RHIPIDOMELLA VANUXEMI (Hall).....	572
7. Ventral valve. Hill south of Potomac River, 2½ miles southeast of Cumberland.	
8, 9. Ventral and dorsal valves. Hinge line is shorter and cardinal angles more acute than in fig. 7. Same locality.	
10. Enlargement of interior of dorsal valve showing hinge. × 2. Williams Road, Polish Mountain, 1371.	
11. Cast of interior of ventral valve showing muscular scars. Base of Parkhead member, hill south of Turners Run Road, 9 miles southeast of Cumberland.	
Jennings formation, Parkhead member.	
Figs. 12, 13. RHIPIDOMELLA VANUXEMI VAR.	
12. Ventral valve.	
13. Cast of interior of dorsal valve.	
Jennings formation, base of Parkhead member, B. & O. R. R. cut, Rocky Run, 7 miles southeast of Cumberland.	
Figs. 14-18. SCHIZOPHORIA STRIATULA (Schlotheim).....	572
14. Cast of interior of ventral valve of an unusually large individual showing deep muscular scars. Western Maryland Railroad, 2 miles west of Pawpaw, 1300.	
15. Cast of interior of ventral valve. Same locality as preceding.	
16. Cast of interior of dorsal valve, preserving striæ. Yellow Springs Road, 3 miles east of Berkeley Springs, West Virginia, 660 feet west of beginning of section.	
17. Cast of interior of dorsal valve. National Road, west of Tonoloway Ridge.	
18. Cast of interior of ventral valve of young individual. Same locality as fig. 16. 310 feet west of beginning of section.	
Jennings formation, Woodmont member, Ithaca fauna.	



3



1



2



4



5



7



6



8



10



9



16



11



17



12



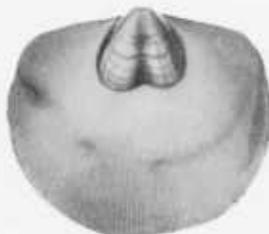
13



14



18



15

MOLLUSCOIDEA—BRACHIOPODA

PLATE LIII

	PAGE
Fig. 1. SCHIZOPHORIA STRIATULA (Schlotheim).....	572
Cast of interior of ventral valve which approaches the next variety. Jennings formation, Chemung member, Ellerslie, Penna., 1474.	
Figs. 2-9. SCHIZOPHORIA STRIATULA VAR. MARYLANDICA n. var.....	574
2-4. Internal casts of dorsal valves.	
5. Internal cast of ventral valve.	
6-8. Three ventral valves.	
9. Dorsal valve.	
Jennings formation, Chemung member, Deer Park and vicinity.	
Fig. 10. SCHIZOPHORIA STRIATULA (Schlotheim) ?.....	572
Internal cast of ventral valve. Jennings formation, Parkhead member, Rocky Run, 7 miles southeast of Cumberland.	
Figs. 11-16. CAMAROTECCHIA CONGREGATA VAR. PARKHEADENSIS n. var.....	575
11. Ventral valve more elongate than usual. Parkhead member, National Road, east of Hancock, 1600.	
12. Cast of interior of ventral valve. Associated with fig. 11.	
13. Dorsal valve. Associated with preceding.	
14. Posterior view of cast of interior. Chemung member, National Road, Polish Mountain above 7th turn.	
15. Cast of interior of dorsal valve. Associated with fig. 14.	
16. Cast of interior of ventral valve. $\times 2$ . Associated with preceding.	
17. Cast of interior of ventral valve approaching <i>C. sappho</i> in form. Base of Parkhead member, road 1 mile north of Rocky Run. 6 miles southeast of Cumberland. Jennings formation.	
Figs. 18-20. CAMAROTECCHIA CONTRACTA (Hall).....	577
18. Ventral valve of typical form showing sharp angular plications. Allegany Grove, 2957.	
19, 20. Ventral valves possessing less angular plications, approaching <i>C. congregata</i> var. <i>parkheadensis</i> . National Road, Polish Mountain, above 7th turn. Jennings formation, Chemung member.	
Fig. 21. CAMAROTECCHIA CONTRACTA (Hall) var.....	577
Cast of interior of ventral valve. Jennings formation, Chemung member, National Road, east of Millstone, 3116.	
Figs. 22-25. CAMAROTECCHIA HORSFORDI (Hall).....	578
22. Ventral valve, doubtfully referred to this species. Chemung member, National Road, Polish Mountain above 7th turn.	
23, 24. Cast of interiors of ventral and dorsal valves. Parkhead member. $2\frac{1}{2}$ miles north of mouth of Sideling Hill Creek, 1700.	
25. Anterior view of shell. Parkhead member, Western Maryland Railroad, 2 miles west of Pawpaw. Jennings formation.	
Figs. 26, 27. CAMAROTECCHIA ORBICULARIS (Hall).....	579
26. Cast of interior of dorsal valve. $2\frac{1}{2}$ miles southwest of Mountain Lake Park.	
27. Side view of dorsal valve. Jennings Run Road, 1 mile east of Barrelville. Jennings formation, Chemung member.	

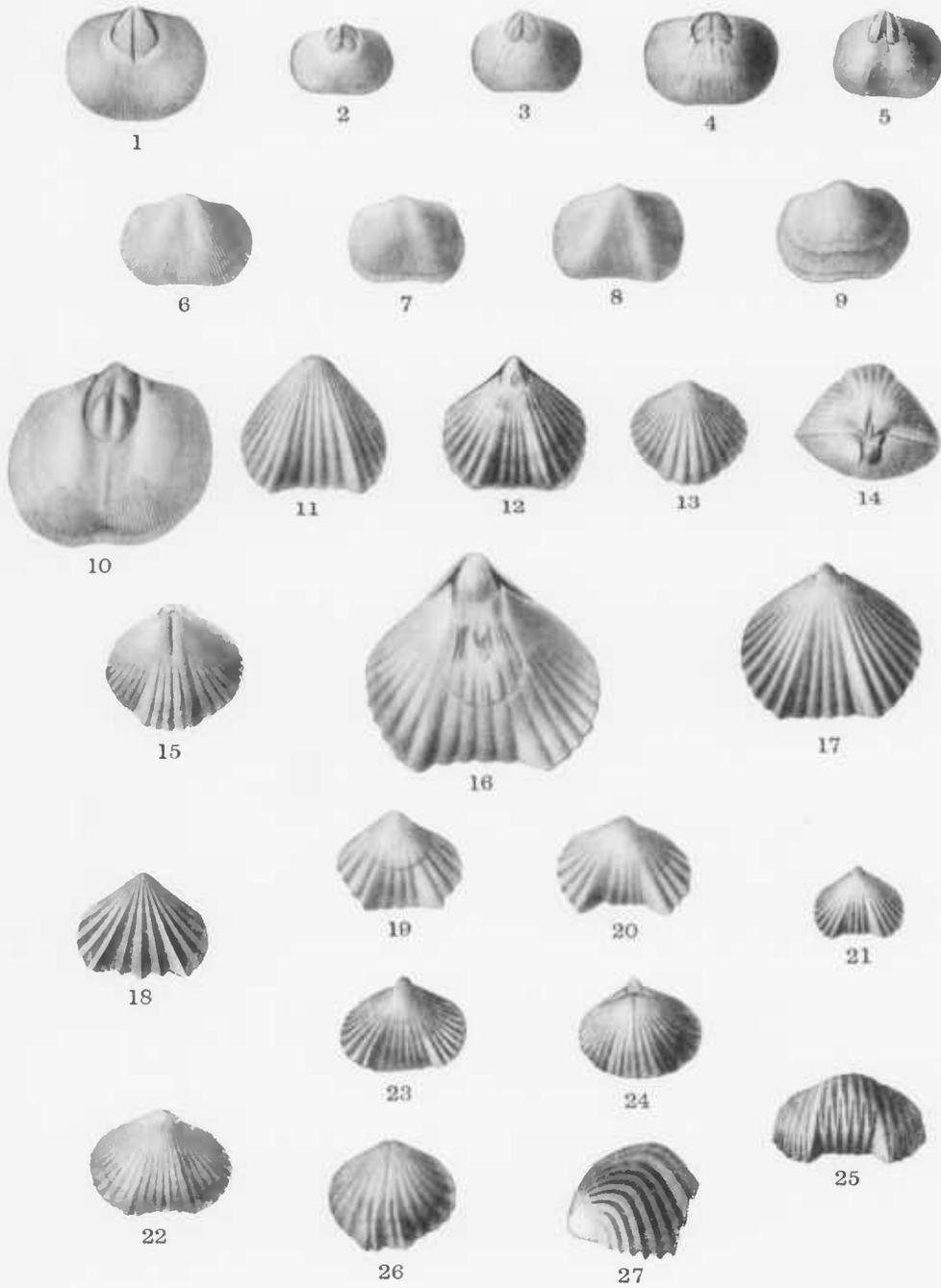
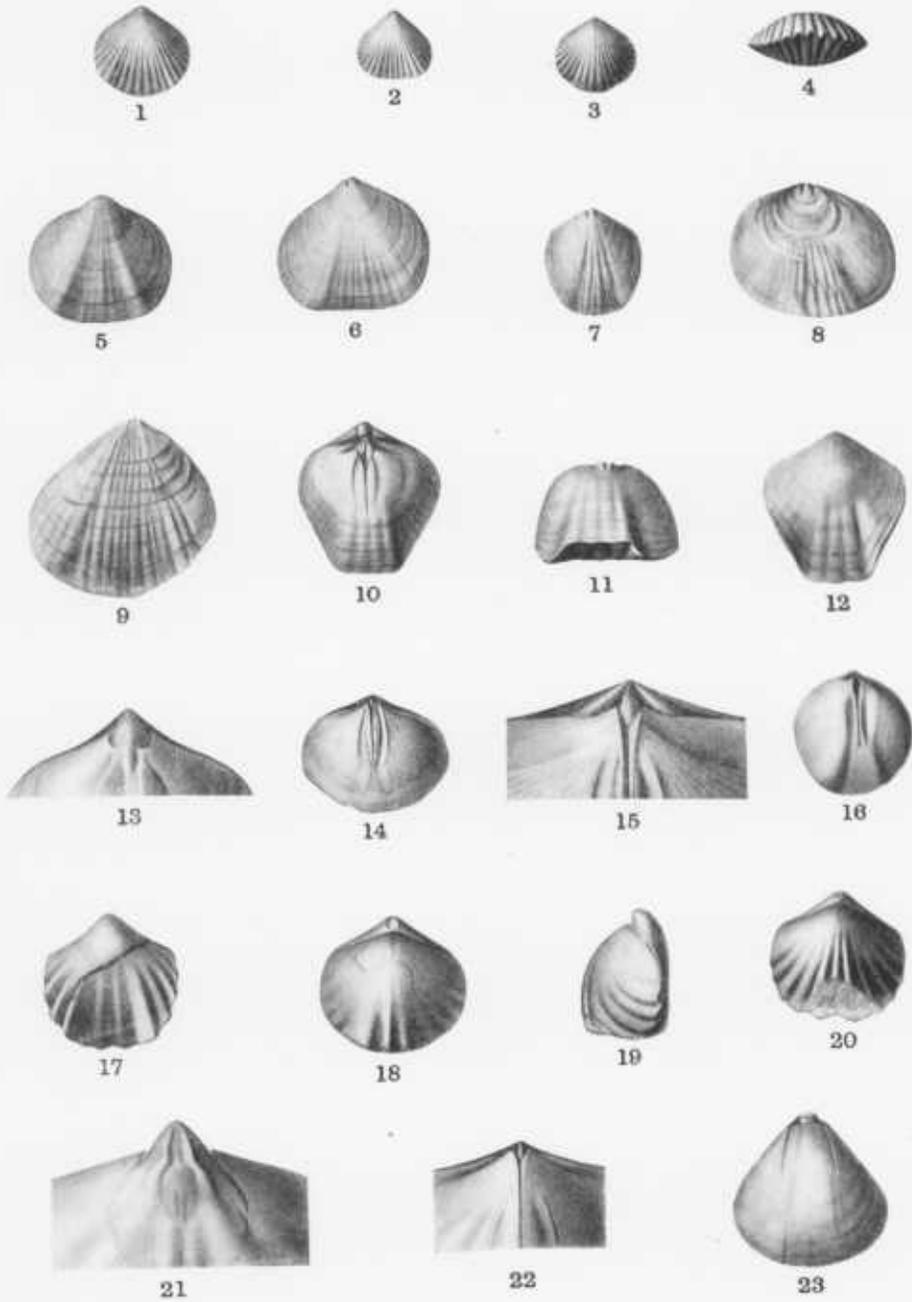


PLATE LIV

	PAGE
Figs. 1-4. <i>CAMAROTECCHIA EXIMIA</i> (Hall) .....	579
1. Ventral valve. Town Creek, 4596.	
2. Cast of interior of ventral valve. Allegany Grove, 1860.	
3. Cast of interior of dorsal valve. Western Maryland Railroad, 2 miles west of Pawpaw, 4703.	
4. Anterior view showing slight development of sinus. $\times 2$ . Town Creek, 4596. Jennings formation, Chemung member.	
Figs. 5-8. <i>LIORHYNCHUS MESACOSTALE</i> Hall.....	581
5. Ventral valve.	
6. Cast of interior of ventral valve.	
7. Cast of interior of ventral valve of young individual.	
8. Cast of interior of ventral valve of a somewhat crushed individual. Jennings formation, Parkhead member, Williams Road, 3½ miles east of Cumberland, 1393.	
Fig. 9. <i>LIORHYNCHUS</i> CF. <i>MULTICOSTUM</i> Hall.....	581
Exterior of ventral valve. Jennings formation, Parkhead member (?), National Road, west side of Green Ridge.	
Figs. 10-16. <i>LIORHYNCHIUS GLOBULIFORME</i> (Vanuxem).....	582
10-12. Dorsal, anterior and ventral views of an internal cast of an unusually elongate individual. Yellow Springs Road, 3 miles east of Berkeley Springs, W. Va., 1124.	
13. Enlargement of muscular scars and hinge of ventral valve. $\times 3$ . National Road, east of Millstone, 1122.	
14. Cast of interior of dorsal valve of usual form. Western Maryland Railroad, 2 miles west of Pawpaw, 1300.	
15. Enlargement of hinge and muscular scars of fig. 14. $\times 4$ .	
16. Cast of interior of dorsal valve. Locality not known. Jennings formation, Woodmont member, Ithaca fauna.	
Figs. 17-22. <i>PUONAX PUONUS</i> VAR. <i>ALTUS</i> Calvin.....	583
17-19. Ventral, dorsal and side views of internal cast. Woodmont, 1000.	
20. Cast of interior of a dorsal valve bearing more pronounced angular plications.	
21. Enlargement of muscular scars and hinge of ventral valve. $\times 3$ . Same locality as figs. 17-19.	
22. Enlargement of hinge of dorsal valve. $\times 3$ . Yellow Springs Run Road, 3 miles east of Berkeley Springs, West Virginia, 510 feet west of beginning of section. Jennings formation, Woodmont member, Ithaca fauna.	
Fig. 23. <i>CRYPTONELLA</i> CF. <i>EUDORA</i> Hall.....	584
Internal cast of a ventral valve. Jennings formation, Chemung member (?), Williams Road, Polish Mountain.	



MOLLUSCOIDEA—BRACHIOPODA

PLATE LV

	PAGE
Figs. 1-5. <i>TROPIDOLEPTUS CARINATUS</i> (Conrad).....	585
1. Ventral valve. Williams Road, 3½ miles east of Cumberland, 1466.	
2. Cast of interior of ventral valve. Sideling Hill Creek, 2½ miles above mouth, 1700.	
3. Dorsal valve. Two miles north of mouth of Town Creek, 1949.	
4. Interior of dorsal valve. Same locality as preceding specimen.	
5. Enlargement of hinge of fig. 4. × 4. Jennings formation, Parkhead member.	
Figs. 6-11. <i>ATRYPA RETICULARIS</i> (Linné).....	586
6. Ventral valve showing alation about margin unusually well. Jennings formation, Woodmont member, Ithaca fauna, National Road, east of Hancock, 690.	
7. Enlargement of hinge of cast of interior of ventral valve. × 2. Same specimen as fig. 6.	
8. Enlargement of hinge of cast of interior of dorsal valve. × 3. 2½ miles northeast of Pratt.	
9. Cardinal region of the dorsal valve enlarged, showing the crenulate dental sockets. Polish Mountain.	
10. Ventral valve retaining parts of concentric lamellæ. Near Deer Park.	
11. Ventral valve. Oakland. Jennings formation, Chemung member.	
Figs. 12, 13. <i>ATRYPA SPINOSA</i> Hall.....	587
12. Ventral valve.	
13. Cast of interior of dorsal valve. Jennings formation, Chemung member, Ellerslie, Penna., 1524.	
Figs. 14-19. <i>ATRYPA HYSTRIX</i> Hall.....	589
14. A young ventral valve. National Road, 5 miles west of Frostburg.	
15. Cast of interior of ventral valve with very coarse plications. ¾ mile southwest of Gortner.	
16. Ventral valve. Trout Creek, Oakland.	
17. Dorsal valve. Near Oakland.	
18. Enlargement of surface showing the lamellæ enfolding into spines. × 2.	
19. Ventral valve. Trout Creek, Oakland. Jennings formation, Chemung member.	



PLATE LVI

	PAGE
Figs. 1-3. <i>CYRTINA HAMILTONENSIS</i> Hall.....	591
1. Cast of interior of ventral valve. Chemung member, road from Oakland to Deer Park.	
2. Cast of interior of ventral cardinal area. Same locality.	
3. Dorsal valve. × 2. Woodmont member, Ithaca fauna, National Road, west of Tonoloway Ridge. Jennings formation.	
Figs. 4-6. <i>RETICULARIA LÆVIS</i> (Hall).....	592
4. Cast of interior of dorsal valve.	
5. Interior of ventral valve. Portage formation, New York.	
6. Cast of interior of ventral valve showing muscular scars. Jennings formation, Woodmont member, Ithaca fauna, National Road, east of Hancock, 690.	
Figs. 7-14. <i>SPIRIFER DISJUNCTUS</i> Sowerby.....	593
7. Ventral valve. National Road, Polish Mountain.	
8, 9. Ventral valves. Near Deer Park.	
10. Ventral valve with extended cardinal angles. National Road, near top of Polish Mountain.	
11. Ventral valve with extended cardinal angles. Near Deer Park.	
12. Interior of dorsal valve. Near Oakland.	
13. Internal cast of ventral valve. National Road, Polish Mountain.	
14. Enlargement of cardinal portion of internal cast of ventral valve. × 2. Town Creek, 2122. Jennings formation, Chemung member.	



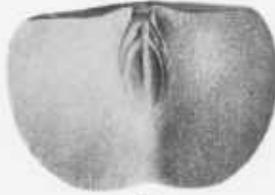
1



2



3



4



5



6



7



8



10



9



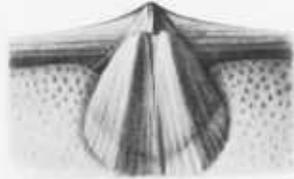
12



11



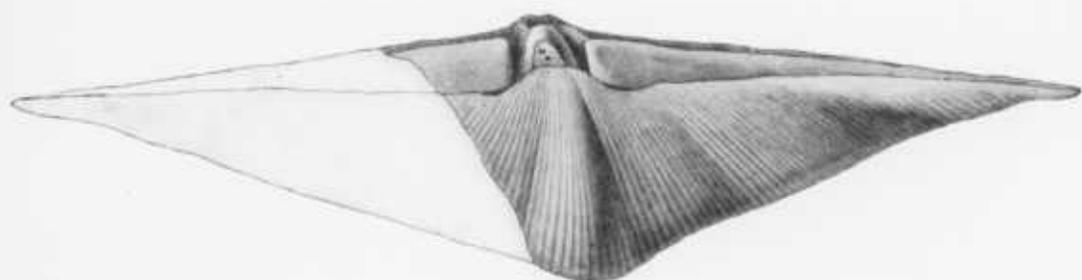
13



14

PLATE LVII

	PAGE
Fig. 1. <i>SPIRIFER DISJUNCTUS</i> Sowerby.....	593
Internal cast of conjoined valves with extremely extended cardinal angles. Jennings formation, Chemung member, near Deer Park.	
Figs. 2-5. <i>SPIRIFER MESASTRIALIS</i> Hall.....	596
2. Cast of interior of ventral valve. Near Pawpaw, W. Va.	
3. Cast of interior of dorsal valve. National Road, east of Millstone, 2444.	
4. Enlargement of portion of surface of dorsal valve. Wills Creek Station, Penna.	
5. Dorsal valve. National Road, east of Millstone. Jennings formation, Chemung member.	
Figs. 6-10. <i>SPIRIFER MARCYI</i> VAR. <i>SUPERSTES</i> n. var.....	597
6. Portion of cast of interior of dorsal valve, enlarged $\times 2$ , showing muscular scars and hinge. B. & O. Railroad cut, Rocky Run, 7 miles southeast of Cumberland.	
7. Enlargement of a portion of surface showing granulose plications. $\times 5$ . National Road, Polish Mountain.	
8. Cast of interior of dorsal valve. National Road, Polish Mountain, above sixth turn.	
9. Cast of interior of dorsal valve with shorter wings. National Road on Green Ridge, 2690.	
10. Posterior view showing cardinal area of ventral valve with partially filled delthyrium. Associated with fig. 9.	
11. Posterior view of cast of interior of ventral valve showing strength of dental plates. Associated with fig. 9. Jennings formation, Figs. 6, 7 from near base of Parkhead member, Figs. 8-11 from Chemung member.	



1



2



4



3



5



6



7



8



11



10

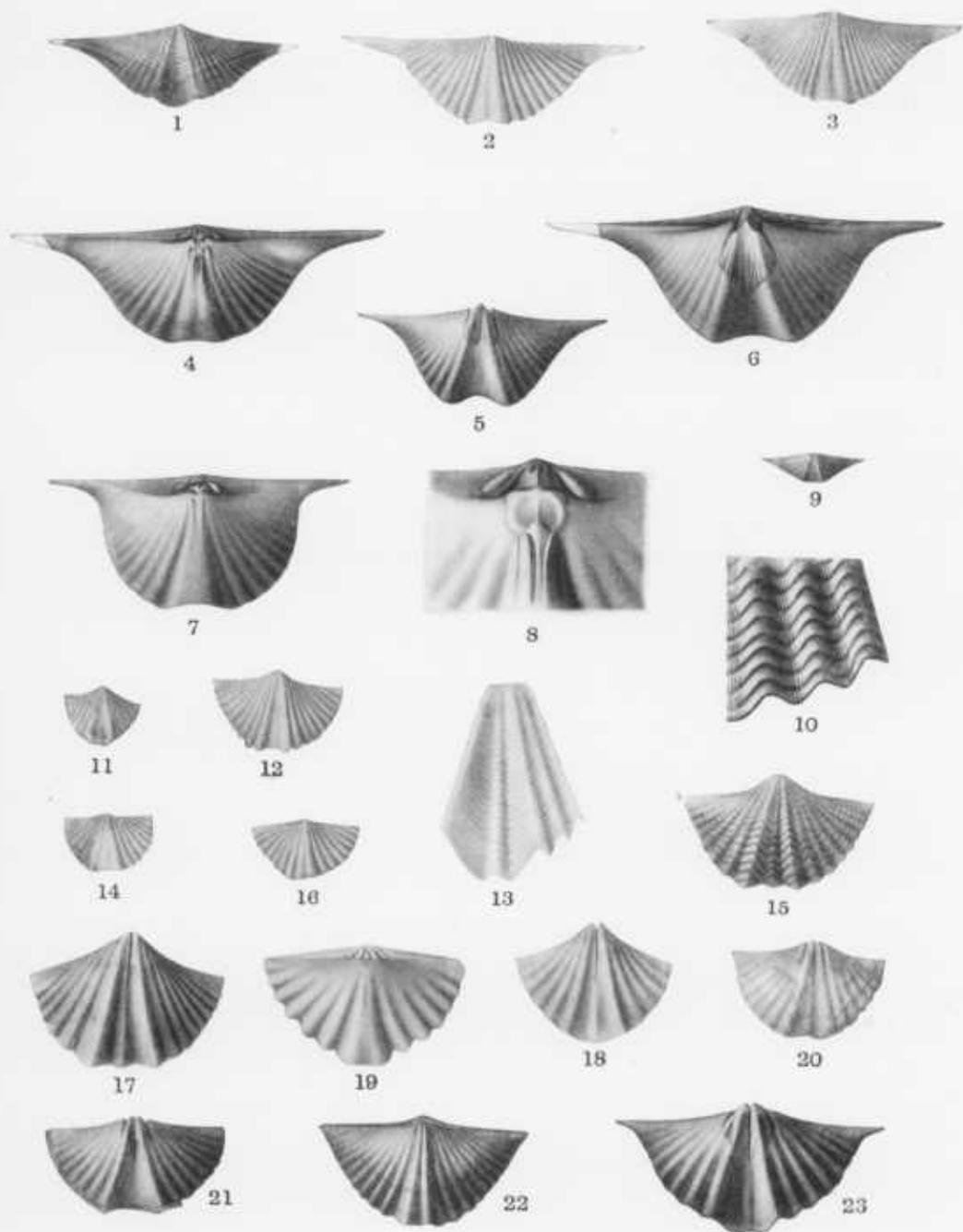


9

PLATE LVIII

PAGE

- Figs. 1-10. *SPIRIFER MUCRONATUS* VAR. *POSTERUS* Hall and Clarke..... 599
1. Ventral valve of medium size. National Road, east of Hancock, 1149 to 1274.
  2. Dorsal valve with extended cardinal angles. National Road, west of Tonoloway Ridge.
  3. Dorsal valve. Associated with fig. 2.
  4. Cast of interior of a very large dorsal valve. Woodmont, 1032.
  5. Cast of interior of ventral valve of medium size. There is no median septum but muscular scar is divided by an impressed line. Yellow Springs Road, 3 miles east of Berkeley Springs, 660 feet west of beginning of section.
  6. Cast of interior of large ventral valve with greatly extended extremities. Woodmont, 1032.
  7. Cast of interior of dorsal valve differing from prevailing form. Woodmont, 1000.
  8. Enlargement of cast of interior of dorsal valve showing muscular scars.  $\times 3$ . Western Maryland Railroad, 2 miles west of Pawpaw, 1300.
  9. Cast of interior of ventral valve of young individual. National Road, east of Hancock, 690.
  10. Enlargement of a portion of exterior of valve of young individual showing ornamentation.  $\times 10$ . National Road, east of Millstone, 795.  
Jennings formation, Woodmont member, Ithaca fauna.
- Figs. 11-23. *SPIRIFER (DELTHYRIS) MESACOSTALIS* Hall..... 601
11. Ventral valve of a very small individual. Near Deer Park.
  12. A larger ventral valve. National Road, Polish Mountain.
  13. Enlargement of a part of surface of ventral valve showing median rib and sharp lamellose concentric markings.  $\times 2$ . Same locality.
  14. Small dorsal valve. Same locality.
  15. Small ventral valve.  $\times 2$ . The ribs are made to appear too sharp and the concentric lines too angular. Near Pawpaw, W. Va.
  16. Small dorsal valve. Near Deer Park.
  - 17, 18. Cast of interior of small ventral valves.  $\times 2$ . Same locality.
  19. Cast of interior of small dorsal valve.  $\times 2$ . Same locality.
  20. Cast of interior of ventral valve. Mountain Lake Park.
  - 21, 22. Cast of interiors of ventral and dorsal valves of usual size. Williams Road, Polish Mountain, 1660.
  23. Cast of interior of large ventral valve having extended cardinal angles. 4700 feet northeast of Sunnyside.  
Jennings formation, figs. 21, 22 Parkhead member, balance Chemung member.



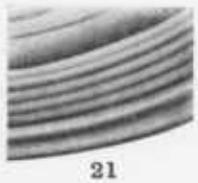
MOLLUSCOIDEA—BRACHIOPODA

PLATE LIX

	PAGE
Figs. 1, 2. <i>SPIRIFER (DELTHYRIS) MESACOSTALIS</i> Hall.....	601
1. Cast of interior of large dorsal valve with greatly extended cardinal angles. 1 mile southeast of Sunnyside.	
2. Cast of interior of ventral valve of usual size. × 2. National Road, Polish Mountain. Jennings formation, Chemung member.	
Figs. 3-7. <i>AMBOCCELIA UMBONATA</i> (Conrad).....	602
3. Ventral valve. × 2. Polish Mountain.	
4. Dorsal valve. × 2. Same locality.	
5. Internal cast of dorsal valve. × 2. Same locality.	
6. Exterior of ventral valve. × 2. Same locality.	
7. Internal cast of ventral valve. × 2. Near Deer Park. Jennings formation, Chemung member.	
Figs. 8-10. <i>ATHYRIS ANGELICA</i> Hall.....	604
8. Dorsal valve.	
9, 10. Ventral valves. Jennings formation, Chemung member, Allegany Grove, 2941.	
Figs. 11, 12. <i>GRAMMYSIA ELLIPTICA</i> Hall.....	606
Two views of a right valve. Jennings formation, Chemung member, 1 mile east of Barrelville.	
Fig. 13. <i>GRAMMYSIA SUBARCUATA</i> Hall.....	606
Left valve. Chemung formation, New York.	
Figs. 14, 15. <i>GRAMMYSIA COMMUNIS</i> Hall.....	607
Right and left valves. Jennings formation, Woodmont member, Ithaca fauna, Yellow Springs Run Road, 3 miles east of Berkeley Springs, W. Va., 1124.	
Figs. 16, 17. <i>PALÆANATINA ANGUSTA</i> .....	609
16. A small right valve.	
17. Cast of interior of right valve. Jennings formation, Chemung member, Town Creek, 4596.	
Figs. 18, 19. <i>SPHENOTUS CONTRACTUS</i> Hall.....	610
18. Sculpture cast of left valve. Chemung formation, New York.	
19. Right valve doubtfully determined. Jennings formation, Chemung member, Wills Creek Station, Penna.	

PLATE LX

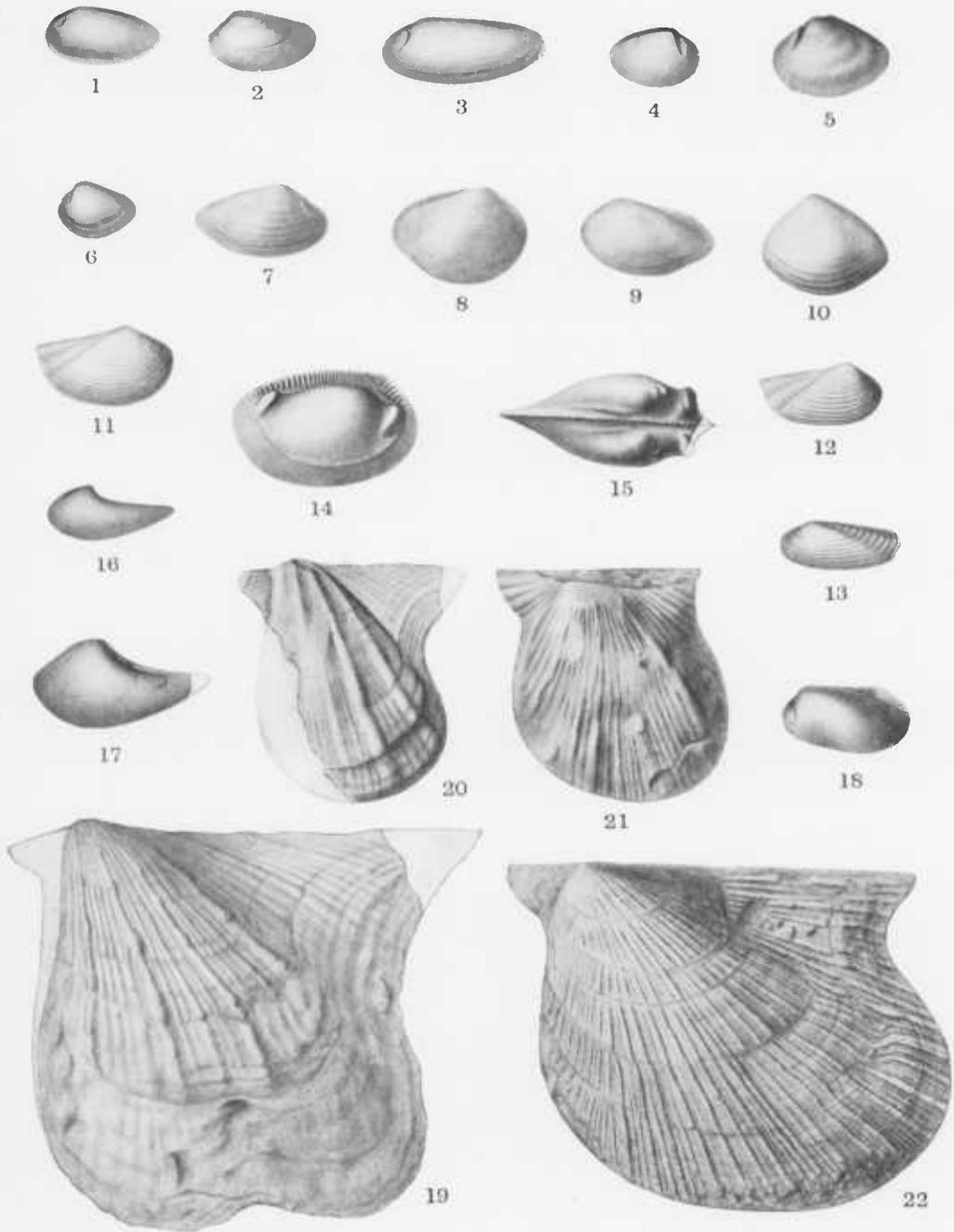
	PAGE
Figs. 1-3. <i>BUCHIOLA RETROSTRIATA</i> (v. Buch).....	613
1. A large right valve, somewhat flattened. × 3. Barrelville Road, ½ mile west of Corriganville.	
2. A very small right valve with few broad flat ribs with coarse recurved surface markings. × 5. Town Creek, Gilpin.	
3. An enlargement showing the smooth embryo shell and the abrupt introduction of the radial ornament in secondary growth. × 10. Wolfe Mills, near Cumberland. Jennings formation, Genesee member.	
Figs. 4-6. <i>BUCHIOLA CONVERSA</i> Clarke.....	615
4. Right valve of type showing the elevated margins and concave surface of the ribs. × 3. Lower Falls of the Genesee River, New York. Naples shales.	
5, 6. Left and right valves. × 5. Jennings formation, Woodmont member, Naples fauna, Town Creek, Gilpin.	
Figs. 7, 8. <i>BUCHIOLA MARLE</i> n. sp.....	615
7. Right valve. × 4.	
8. Smaller right valve. × 3. Jennings formation, Genesee member, Williams Road, Cumberland.	
Figs. 9-12. <i>BUCHIOLA ? LIVONIAE</i> Clarke.....	616
9. Right valve showing the numerous flattened ribs. × 4. Jennings formation, Woodmont member, Naples fauna, National Road, east of Town Creek, Gilpin.	
10. The two valves, normally expanded. Romncy Road, 3½ miles southeast of Burlington, W. Va. Jennings formation, Genesee member.	
11. Right valve. × 4. Same locality as fig. 10.	
12. Left valve of the type specimen showing the fine concentric lineation of ribs. × 3. Styliola limestone of Genesee shales, Livonia salt shaft, New York.	
Figs. 13-16. <i>PARACARDIUM DORIS</i> Hall.....	617
13. A small right valve. × 4. Wolfe Mills, near Cumberland.	
14. Both valves. × 4. Wolfe Mills, near Cumberland.	
15. A large right valve. × 4. West of Corriganville.	
16. The right valve. × 4. Same locality as fig. 15. Jennings formation, Genesee member.	
Figs. 17, 18. <i>PARACARDIUM DELICATULUM</i> Clarke.....	618
17. A valve with normal characters, somewhat deformed about the hinge. × 10. This is the type specimen. Styliola limestone of the Genesee shale (Naples fauna). Canandaigua Lake, New York.	
18. A right valve showing the extremely fine radial ribs, which are crossed by concentric lines, though these are made much too strong in the drawing. × 10. Jennings formation, Genesee member, Wolfe Mills, near Cumberland.	
Figs. 19-23. <i>NUCULA CORBULIFORMIS</i> Hall.....	619
19. Cast of interior of left valve. × 2. Woodmont member, Ithaca fauna, National Road, west of Tonoloway Ridge.	
20. Cast of interior of left valve. × 2. Woodmont member, Ithaca fauna, same locality as fig. 19.	
21. Enlargement of portion of exterior. × 8. Woodmont member, Ithaca fauna, Berkeley Springs, West Virginia, 1058.	
22. Right valve. Parkhead member, 2 miles north of mouth of Town Creek, 1716.	
23. Enlargement of cast of interior showing hinge. Parkhead member, Williams Road, Polish Mountain, 1352. Jennings formation.	
Fig. 24. <i>PALÆONEILO PETILA</i> Clarke ?.....	624
Right valve. × 2. Jennings formation, Woodmont member, Naples fauna, Williams Road, 3½ miles east of Cumberland, 406.	
Fig. 25. <i>PALÆONEILO MAXIMA</i> (Conrad) ?.....	622
Cast of interior of right valve. 2 miles north of mouth of Town Creek, Parkhead member, 1282. Jennings formation.	



MOLLUSCA—PELECYPODA

PLATE LXI

	PAGE
Figs. 1-3. <i>PALÆONEILO PLANA</i> Hall.....	621
1. Cast of interior of left valve. National Road, east of Millstone, 2322.	
2. Left valve. Associated with preceding.	
3. Cast of interior of a very elongate left valve probably of this species. Near Mr. Cheney's, 2½ miles northeast of Pratt, at base of section. Jennings formation, Chemung member.	
Figs. 4-6. <i>PALÆONEILO BREVIS</i> Hall.....	622
4, 5. Casts of interiors of right and left valves. Parkhead member, Western Maryland Railroad, 2 miles west of Pawpaw, 1763.	
6. Cast of interior of left valve. Woodmont member, Ithaca fauna, Woodmont. Jennings formation.	
Figs. 7-10. <i>PALÆONEILO CONSTRICTA</i> (Conrad).....	620
7. Cast of interior of right valve. Jennings formation, Woodmont member, Ithaca fauna, Woodmont, 710.	
8, 9. Sculpture casts of right and left valves. Hamilton formation, western New York.	
10. Cast of left valve. Jennings formation, Chemung member, Green Ridge.	
Figs. 11, 12. <i>PALÆONEILO FILOSA</i> (Conrad).....	623
Two right valves. × 2. Jennings formation, Chemung member, near Wills Creek Station, Penna.	
Fig. 13. <i>PALÆONEILO ANGUSTA</i> Hall.....	624
Left valve. Jennings formation, Chemung member, 1 mile southeast of Sunnyside.	
Figs. 14, 15. <i>PALÆONEILO CRASSA</i> n. sp.....	625
14. Cast of interior of right valve of type.	
15. Dorsal view of internal cast. Jennings formation, Chemung member, Town Creek, 3584.	
Figs. 16, 17. <i>LEDA</i> cf. <i>DIVERSA</i> Hall.....	626
16. Cast of interior of left valve. × 2. Town Creek, 3760.	
17. Cast of interior of left valve. × 2. Town Creek, 3870. Jennings formation, Chemung member.	
Fig. 18. <i>MACRODON CHEMUNGENSIS</i> Hall.....	627
Cast of interior of left valve. Jennings formation, near base of Park- head member, White Sulphur Branch, 4 miles southeast of Pratt.	
Figs. 19-21. <i>PTERINEA NODOCOSTA</i> n. sp.....	628
19. A large left valve showing the coarse nodose ribs and finer inter- vening ones. Oakland.	
20, 21. Two rather imperfect and small left valves. Near Deer Park and Oakland. Jennings formation, Chemung member.	
Fig. 22. <i>PTERINEA CHEMUNGENSIS</i> (Conrad).....	629
22. A left valve of normal character. Jennings formation, Chemung member, National Road, 7 miles west of Frostburg.	



MOLLUSCA—PELECYPODA

PLATE LXII

	PAGE
Figs. 1-3. <i>LUNULICARDIUM ENCRINITUM</i> Clarke.....	630
1. Left valve showing the finely lineate surface. × 3. Town Creek, Gilpin, Allegany County.	
2. Same. × 2. Wolfe Mills, near Cumberland.	
3. Same. × 3. Allegany County. Jennings formation, Genesee member.	
Fig. 4. <i>LUNULICARDIUM CYMBULA</i> n. sp.....	631
The single valve observed. × 5. Jennings formation, Genesee mem- ber, near Corriganville.	
Figs. 5-7. <i>PTEROCHÆNIA FRAGILIS</i> (Hall).....	632
5. Right valve showing the smooth concentrically lined surface and the sica. × 3. Jennings formation, Woodmont member, Naples fauna, Town Creek, Gilpin.	
6, 7. Right and left valves. × 3. Jennings formation, Genesee mem- ber, west of Corriganville.	
Figs. 8, 9. <i>ECTENODESMA BIROSTRATUM</i> Hall.....	633
8. Cast of interior of left valve. The wings of this specimen are broken. Jennings formation, Woodmont member, Ithaca fauna, Little Orleans, Wagon Road, north of Western Maryland R. R.	
9. Left valve. Chemung formation, New York.	
Figs. 10-12. <i>LIOPTERIA BIGSBYI</i> Hall.....	634
10, 11. Left and right valves. Hamilton or Ithaca, Schoharie, New York.	
12. Left valve doubtfully referred to this species. Jennings forma- tion, Chemung member, National Road, Polish Mountain, 2714.	
Figs. 13, 14. <i>LIOPTERIA MARYLANDICA</i> n. sp.....	635
Casts of interior of two left valves. Jennings formation, Chemung member, Town Creek, 2023.	

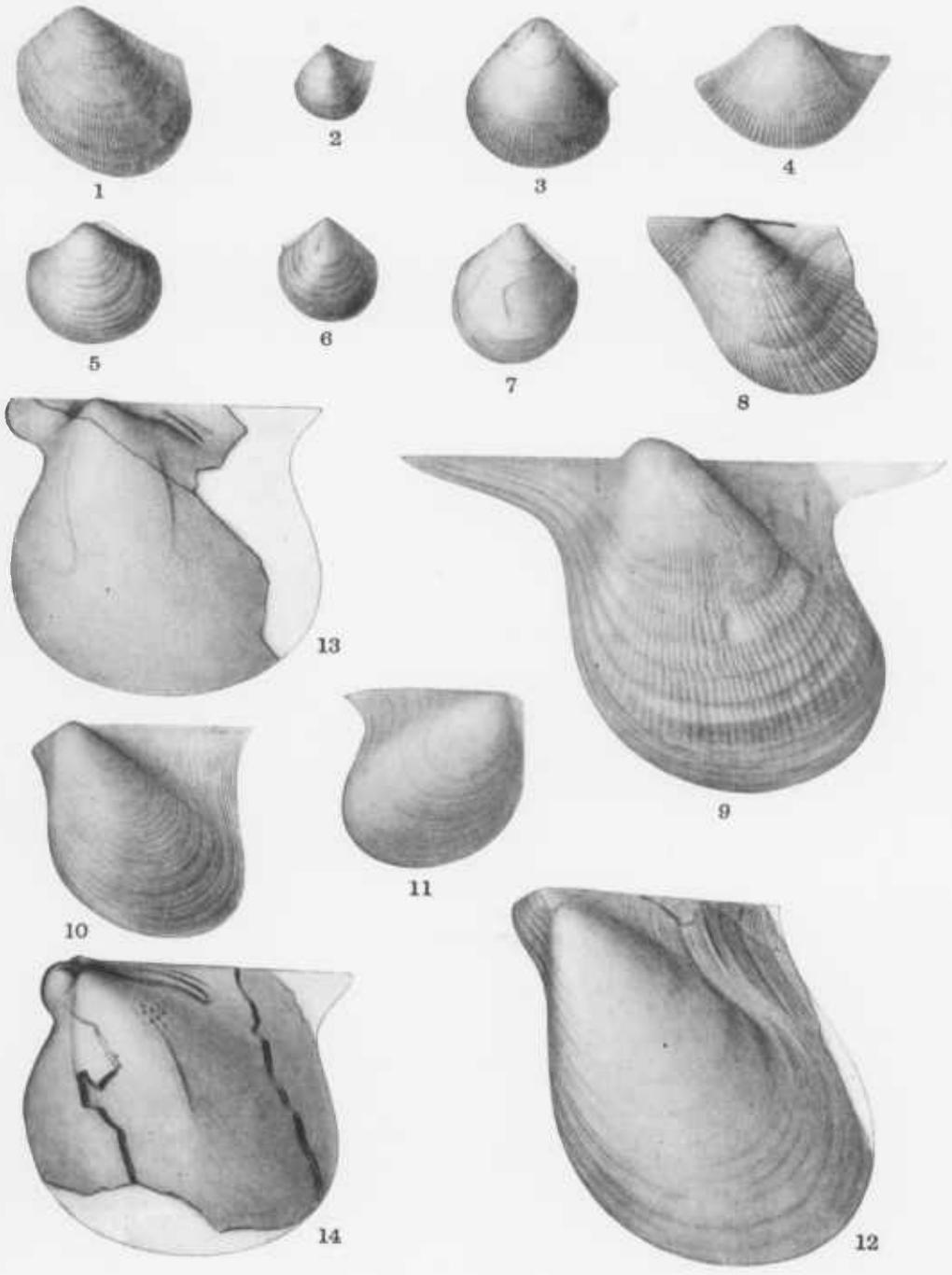
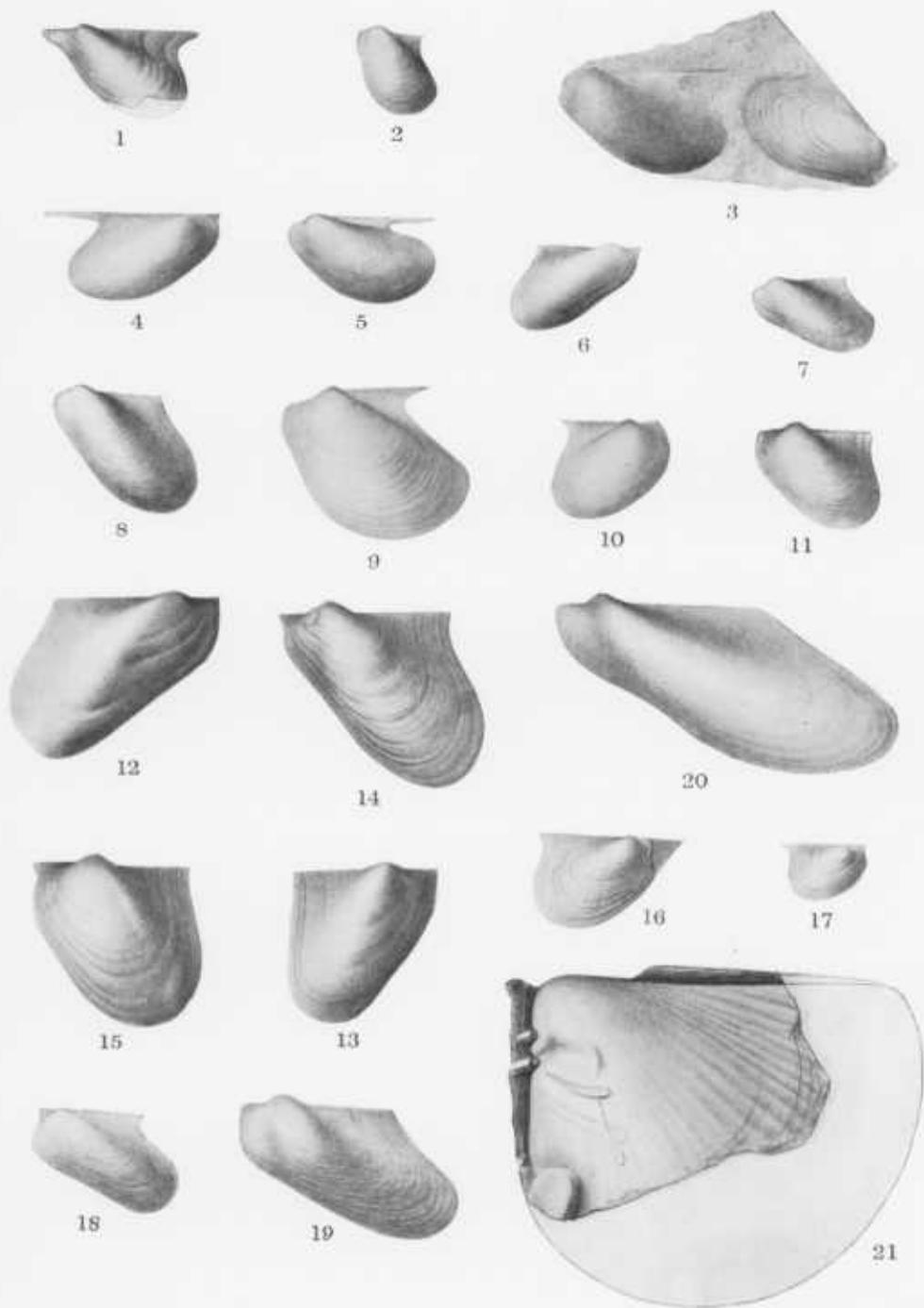


PLATE LXIII

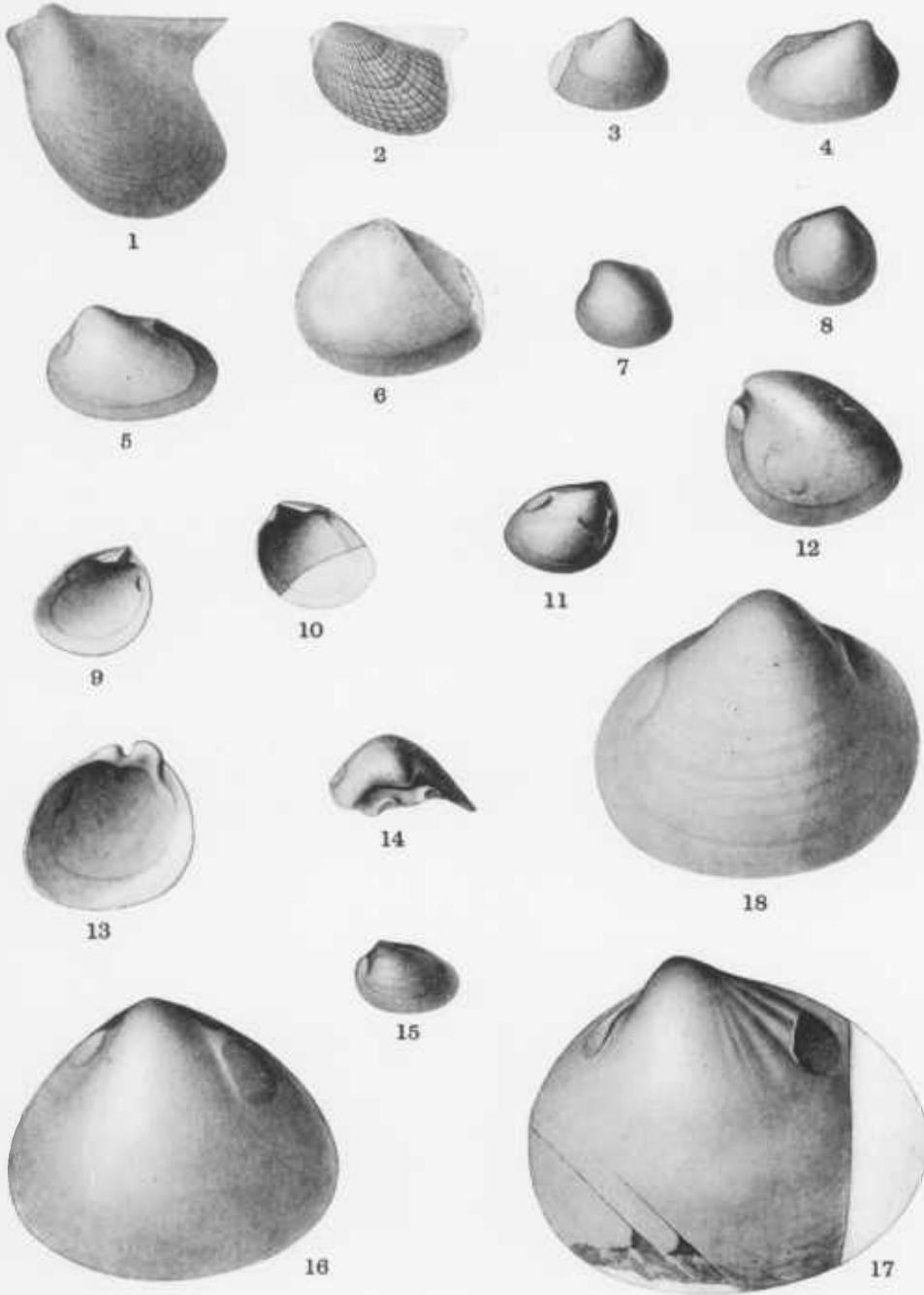
	PAGE
Fig. 1. LIOPTERIA AURICULATA n. sp.....	636
<p style="padding-left: 40px;">Exterior of left valve. The anterior ear is made too large in drawing. Jennings formation, Woodmont member, Ithaca fauna, National Road, east of Millstone, 795.</p>	
Fig. 2. LIOPTERIA sp.	
<p style="padding-left: 40px;">A small suberect left valve with short posterior wing and concentrically lined surface. Jennings formation, Chemung member, Trout River, 2 miles south of Oakland.</p>	
Fig. 3. LEPTODESMA ROGERSI Hall.....	636
<p style="padding-left: 40px;">Right and left valves. Ithaca beds, Norwich, N. Y.</p>	
Figs. 4-8. LEPTODESMA LONGISPINUM Hall.....	637
<p style="padding-left: 40px;">4. Right valve. Chemung formation, New York. 5. Left valve with posterior spine restored. Near Oakland. 6. Left valve doubtfully referred to this species. National Road, 6 miles west of Frostburg. 7, 8. Right and left valves. Same locality. Jennings formation, Chemung member.</p>	
Figs. 9, 10. LEPTODESMA AOASSIZI Hall.....	637
<p style="padding-left: 40px;">9. Left valve. 10. Right valve. Chemung formation, New York.</p>	
Figs. 11-15. LEPTODESMA MEDON Hall.....	638
<p style="padding-left: 40px;">11. Small left valve. National Road, 7 miles west of Frostburg. 12, 13. Right valves. Allegany Grove, 2307. 14, 15. Left valves. Allegany Grove, about 2215. Jennings formation, Chemung member.</p>	
Figs. 16, 17. LEPTODESMA NAVIFORME Hall.....	639
<p style="padding-left: 40px;">16. Exterior of large right valve showing faint radiating striæ. 17. Exterior of right valve of somewhat different proportions. Jennings formation, near base of Parkhead member, Williams Road, 4 miles east of Cumberland.</p>	
Figs. 18, 19. LEPTODESMA LICHAS Hall.....	640
<p style="padding-left: 40px;">18. Left valve. Jennings formation, Chemung member, National Road, 6 miles west of Frostburg. 19. Left valve. Chemung formation, New York.</p>	
Fig. 20. LEPTODESMA ELONGATUM n. sp.....	640
<p style="padding-left: 40px;">Left valve. Jennings formation, near top of Chemung member, Keyser-Piedmont Road, 2½ miles west of Keyser, W. Va.</p>	
Fig. 21. GOSSELLETIA sp. ....	641
<p style="padding-left: 40px;">Cast of interior left valve. Jennings formation, Chemung member, Williams Road, Polish Mountain.</p>	



MOLLUSCA—PELECYPODA

PLATE LXIV

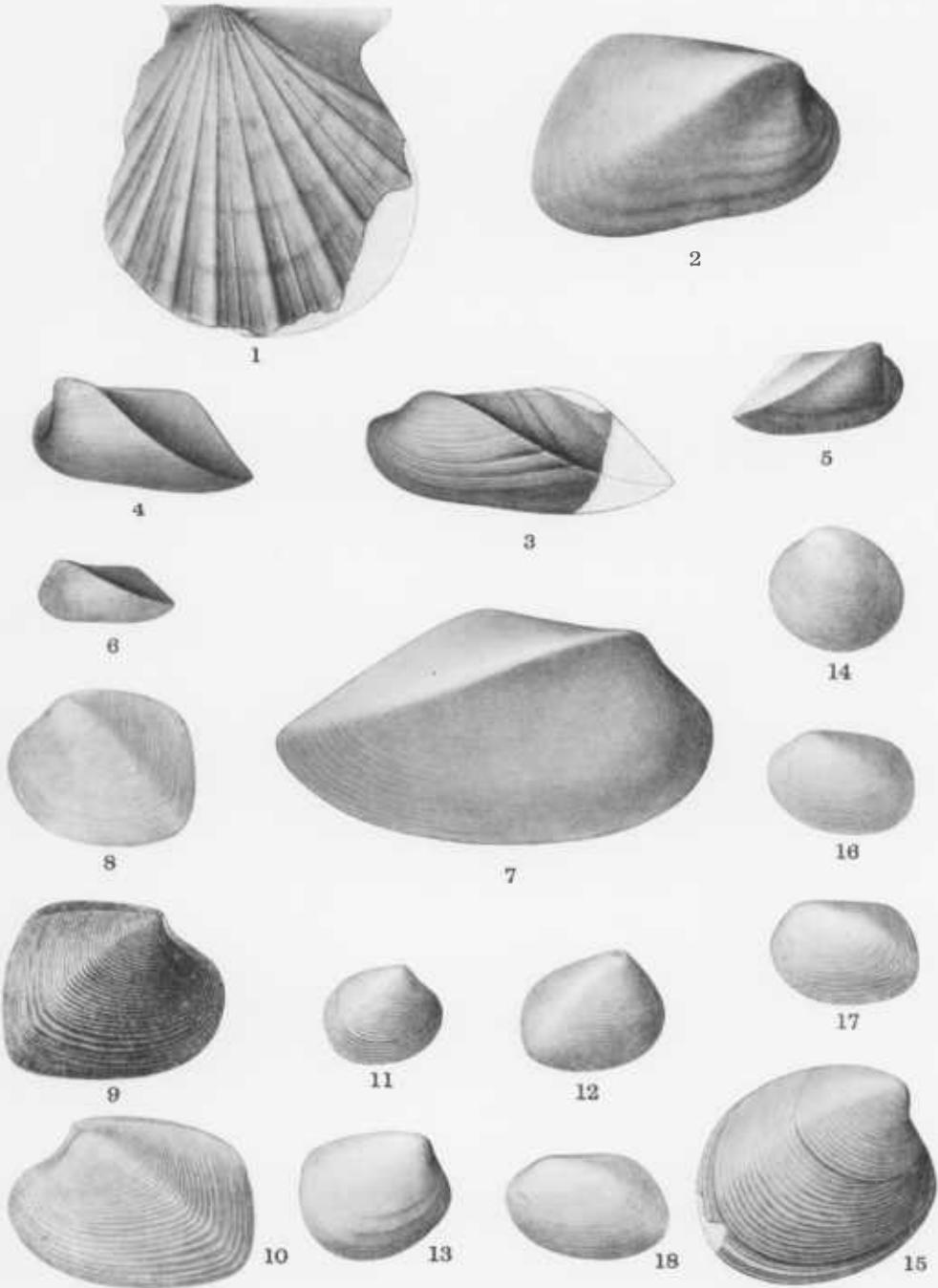
	PAGE
Fig. 1. ACTINOPTERIA CF. EPSILON Hall.....	642
A large left valve, showing radial lines. Ithaca beds, Ithaca, N. Y.	
Fig. 2. ACTINOPTERIA BOYDI (Conrad).....	642
Left valve, outline restored. Jennings formation, Woodmont member, Ithaca fauna, Woodmont, 1170.	
Figs. 3-5. SCHIZODUS CHEMUNOENSIS (Conrad).....	644
3, 4. Casts of interior of right valve.	
5. Cast of interior of left valve.	
Jennings formation, Chemung member, Town Creek, 3453.	
Fig. 6. SCHIZODUS CHEMUNGENSIS VAR. QUADRANGULARIS Hall.....	645
Left valve. Jennings formation, Chemung member, near Deer Park.	
Figs. 7-14. SCHIZODUS OHERNI n. sp.....	646
7. Left valve.	
8. Cast of interior of right valve of more circular shape than usual.	
9, 10. Interior of left and right valves showing hinge.	
11. Cast of interior of right valve.	
Jennings formation, Parkhead member, National Road, east of Millstone, 1781.	
12, 13. Cast of interior of very large left valves.	
14. Posterior view of cast of valve shown in fig. 13.	
Jennings formation, Chemung member, Sideling Hill Creek.	
Fig. 15. SCHIZODUS FROSTBURGOENSIS n. sp.....	647
Cast of interior of left valve. Jennings formation, Chemung member, National Road, 7 miles west of Frostburg.	
Figs. 16-18. SCHIZODUS TRIGONALIS n. sp.....	647
16-17. Casts of interiors of left valves. Chemung member, Town Creek, 2228.	
18. Cast of interior of right valve, probably of this species. Parkhead member, National Road, east of Millstone, 1781.	
Jennings formation.	



MOLLUSCA—PELECYPODA

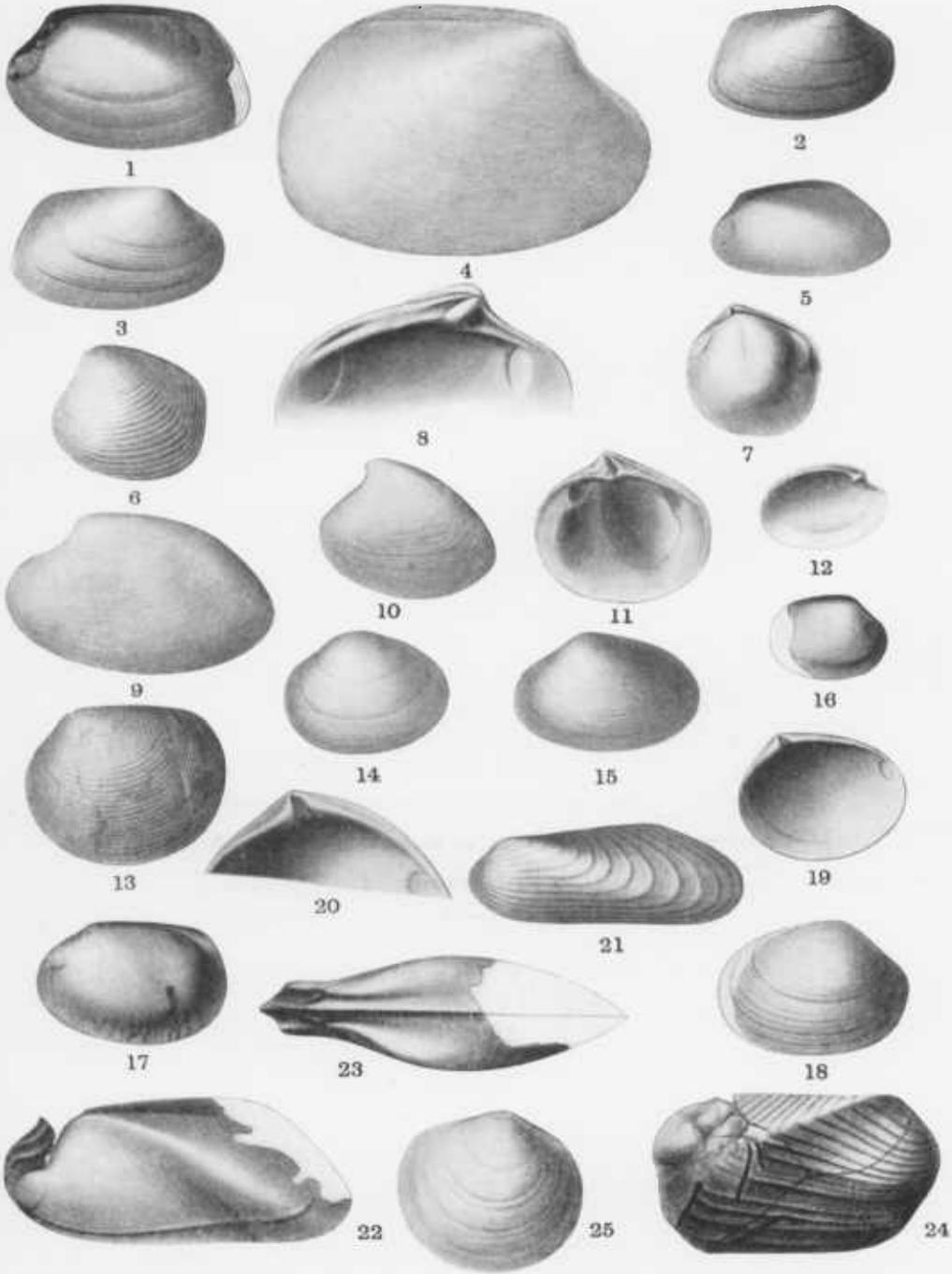
PLATE LXV

	PAGE
Fig. 1. <i>LYRIOPECTEN TRICOSTATUS</i> (Vanuxem).....	649
Left valve with characteristic surface markings. Jennings formation, Chemung member, Allegany County, near West Virginia line.	
Fig. 2. <i>MODIOMORPHA SUBANGULATA</i> Hall var.....	650
Right valve. Jennings formation, Chemung member, Williams Road, Polish Mountain, 2382.	
Fig. 3. <i>GONIOPHORA HAMILTONENSIS</i> Hall.....	651
Left valve. Jennings formation, Parkhead member, Western Mary- land Railroad, 2 miles west of Pawpaw, 1485.	
Figs. 4-6. <i>GONIOPHORA TRUNCATA</i> Hall.....	651
4. Cast of interior of left valve.	
5. Cast of interior of right valve.	
6. Left valve.	
Jennings formation, Parkhead member, Williams Road, Polish Mountain, 1660.	
Fig. 7. <i>GONIOPHORA GLAUCA</i> Hall.....	652
Right valve. Jennings formation, base of Parkhead member, White Sulphur Branch, 4 miles southeast of Pratt.	
Figs. 8-10. <i>CYPRICARDELLA BELLISTRIATA</i> (Conrad).....	653
8. Left valve.	
9. Right valve.	
10. Left valve.	
Hamilton formation, New York.	
Figs. 11-15. <i>CYPRICARDELLA MARYLANDICA</i> n. sp.....	654
11. Right valve.	
12. Right valve somewhat distorted.	
13. Internal cast of right valve.	
14. Left valve of normal outline.	
15. Right valve expressing the correct characters of the exterior. $\times 2$ .	
Jennings formation, Chemung member, Deer Park.	
Figs. 16-18. <i>CYPRICARDELLA GREGARIA</i> (Hall).....	654
Internal casts of left valves. Jennings formation, Parkhead (?) mem- ber, National Road, west of Green Ridge.	



MOLLUSCA—PELECYPODA

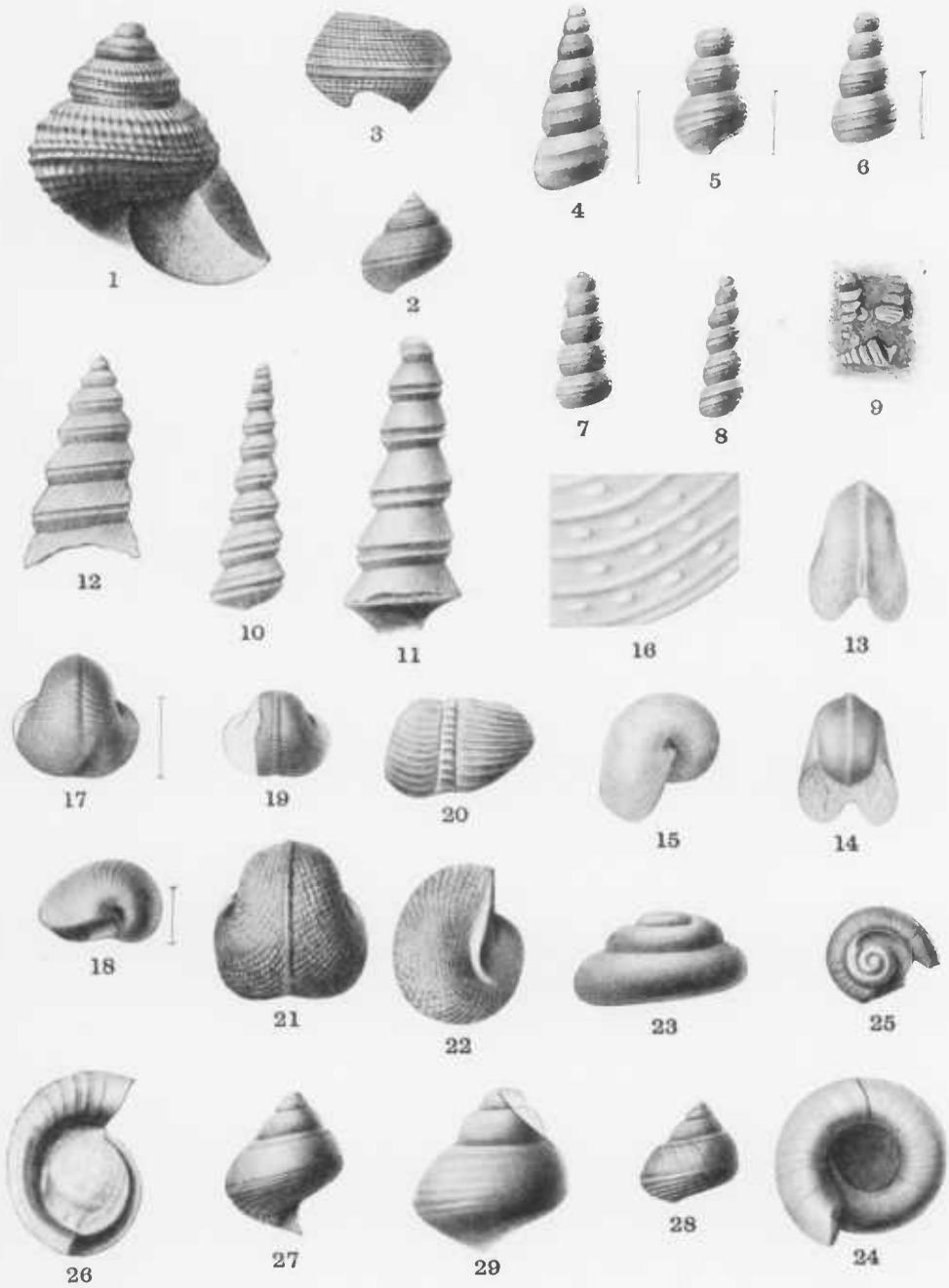
- Figs. 1-5. *CYPRICARDELLA TENUSTRIATA* (Hall)..... 656
1. Cast of interior of left valve. Sideing Hill Creek, 2½ miles above mouth, 1700.
  2. Right valve. Two miles north of mouth of Town Creek, 1716.
  3. Right valve, somewhat questionably referred to this species, upon which concentric striæ of umbo are nearly obsolete. Two miles north of mouth of Town Creek, 1632.  
Jennings formation, Parkhead member.
  4. Large left valve. Hamilton formation, New York.
- Figs. 6-12. *CYPRICARDELLA NITIDULA* n. sp..... 656
6. Left valve showing the well marked umbonal slope and strong concentric ridges. × 2.
  7. Internal cast of left valve showing muscle scars and hinge. × 2.
  8. Gutta-percha squeeze of hinge of left valve. × 2.
  - 9, 10. Two left valves of an elongate finely lined shell, with posterior umbonal ridge close upon the margin. These shells resemble in outline *C. tenuistriata* Hall except for the position of the posterior ridge.
  11. Gutta-percha squeeze showing interior of right valve. × 2.
  12. The interior of a small left valve of the same species.  
Jennings formation, Chemung member, figs. 6-11 Deer Park, fig. 12 National Road, west of Frostburg.
- Fig. 13. *CYPRICARDELLA CUMBERLANDIÆ* n. sp..... 657
- Cast of interior left valve. Jennings formation, Chemung member, Alleghany Grove.
- Figs. 14-20. *CYPRICARDELLA CRASSA* n. sp..... 657
- 14, 15. Left valves.
  16. Cast of interior of right valve.
  17. Cast of interior of left valve.
  18. Right valve.
  19. Interior of right valve.
  20. Hinge of right valve enlarged × 2.  
Jennings formation, Chemung member, National Road, east of Miistone, 2761.
- Fig. 21. *CYPRICARDINIA ELEGANS* n. sp..... 659
- Left valve of type. Jennings formation, Chemung member, National Road, 300 feet west of schoolhouse, Belle Grove.
- Figs. 22-24. *CYPRICARDINIA ELEGANS* VAR. *ANGUSTA* n. var..... 659
22. Cast of interior of left valve.
  23. Dorsal view of internal cast. The valves are not equal in convexity as the figure seems to indicate.
  24. Right valve.  
Jennings formation, Chemung member, Town Creek, 3584.
- Fig. 25. *PARACYCLAS MARYLANDICA* n. sp..... 660
- Right valve of type. Jennings formation, Chemung member, Town Creek, 3870.



MOLLUSCA—PELECYPODA

PLATE LXVII

	PAGE
Figs. 1-3. <i>PLEUROTOMARIA (GYROMA) CAPILLARIA</i> Conrad.....	661
1. Ventral view of large individual. × 2. Hamilton formation, New York.	
2. Dorsal view of small shell. Jennings formation, Parkhead member, Sideling Hill Creek, 2½ miles above mouth, 1700.	
3. Exterior of portion of shell showing ornamentation and slit band. Associated with preceding.	
Fig. 4. <i>HORMATOMA BISTRIATA</i> n. sp.....	663
Dorsal view of type. × 2. Jennings formation, Parkhead member, Sideling Hill Creek, 2½ miles above mouth, 1700.	
Figs. 5-8. <i>ECTOMARIA MARYLANDICA</i> n. sp.....	663
5. Dorsal view of shell. × 2. The apical angle is too large in drawing. Western Maryland Railroad, 2 miles west of Pawpaw, 1597.	
6. Dorsal view of shell. × 2. Sideling Hill Creek, 2½ miles above mouth, 1700.	
7. Dorsal view of type specimen. Western Maryland Railroad, 2 miles west of Pawpaw, 1597.	
8. Cast of exterior of shell. The apical angle is much too small, due to cast. Same locality. Jennings formation, Parkhead member.	
Figs. 9-12. <i>ECTOMARIA ECCLESIAE</i> n. sp.....	664
9. A group of shells, natural size. Near Oakland.	
10. Dorsal view. × 3. Deer Park.	
11. Part of the spiral with the concentric striæ obsolete. × 5. Near Oakland.	
12. An enlargement of part of the spire showing the surface ornamentation. × 5. Polish Mountain. Jennings formation, Chemung member.	
Figs. 13-16. <i>BELLEROPHON NACTOIDES</i> n. sp.....	665
13-15. Dorsal, ventral, and side views of cast of exterior. National Road, west of Tonoloway Ridge.	
16. Enlargement of portion of surface. × 3. Same locality. Jennings formation, Woodmont member, Ithaca fauna.	
Figs. 17-20. <i>BELLEROPHON CLARKI</i> n. sp.....	666
17-18. Dorsal and side view of type specimen. × 1½. Williams Road, Polish Mountain, 1660.	
19. Dorsal view. Western Maryland Railroad, 2 miles west of Pawpaw, 1597.	
20. Enlargement of exterior showing ornamentation. Polish Mountain. Jennings formation, Parkhead member.	
Figs. 21, 22. <i>BUCANOPSIS MÆRA</i> (Conrad).....	667
Dorsal and side view of shell. Chemung formation, New York.	
Figs. 23-25. <i>STRAPAROLLUS MARYLANDICUS</i> n. sp.....	668
23. Internal cast of type, dorsal view.	
24. Lower surface of specimen illustrated in fig. 23, showing large umbilicus. Sideling Hill Creek, 2½ miles above mouth, 1700.	
25. Upper view of small shell. Williams Road, Polish Mountain, 1661. Jennings formation, Parkhead member.	
Fig. 26. <i>PHÆNEROTINUS LAXUS</i> (Hall).....	669
Internal cast. Parkhead member, Sideling Hill Creek, 2½ miles above mouth, 1700.	
Figs. 27-29. <i>CYCLONEMA CONCINNUM</i> Hall.....	670
27. Dorsal view showing ornamentation. Chemung member, Town Creek, 2228.	
28. Dorsal view of smaller specimen. Parkhead member, Western Maryland Railroad, 2 miles west of Pawpaw, 1597.	
29. Internal cast. Parkhead member, Sideling Hill Creek, 2½ miles above mouth. Jennings formation.	



MOLLUSCA—GASTROPODA

PLATE LXVIII

	PAGE
Figs. 1-4. <i>CYCLONEMINA CRENULISTRIATA</i> n. sp.....	671
1. Dorsal view.	
2. Portion of the surface of a shell enlarged. × 3.	
3. Dorsal view of individual showing great thickness of the shell.	
4. Dorsal view showing aperture. Type.	
Jennings formation, Chemung member, Town Creek, 2228.	
Fig. 5. <i>CYCLONEMINA CRENULISTRIATA</i> VAR. <i>OBSCULESCENS</i> n. var.....	672
Shell preserving portion of test, showing ornamentation. Jennings formation, Chemung member, Town Creek, 2228.	
Figs. 6-10. <i>CYCLONEMINA MULTISTRIATA</i> n. sp.....	672
6. Dorsal view of type. Sideling Hill Creek, 2½ miles above mouth, 1700.	
7. Enlargement of a portion of the surface showing ornamentation. × 5. Same locality.	
8. Dorsal view of a shell of slightly different proportions. Same locality.	
9. Cast of interior. Same locality.	
10. Internal cast of a very large shell. Williams Road, Polish Mountain, 1600.	
Jennings formation, Parkhead member.	
Figs. 11, 12. <i>TURBO CORONOLA</i> n. sp.....	673
11. Profile from a replica. The original cast of this is somewhat imperfect or distorted about the lower edge of the aperture.	
12. A part of the exterior drawn from a gutta-percha squeeze.	
Jennings formation, Chemung member, National Road, 6 miles west of Frostburg.	
Fig. 13. <i>TROCHONEMA (GYRONEMA) LIRATUM</i> (Hall).....	674
Dorsal view. Jennings formation, Chemung member, National Road, east of Hancock, 2223.	
Figs. 14, 15. <i>MACROCHILINA PULCHELLA</i> n. sp.....	675
14. Internal cast of the only specimen observed. × 5.	
15. Exterior of the same. × 5.	
Jennings formation, Chemung member, Williams Road, Polish Mountain.	

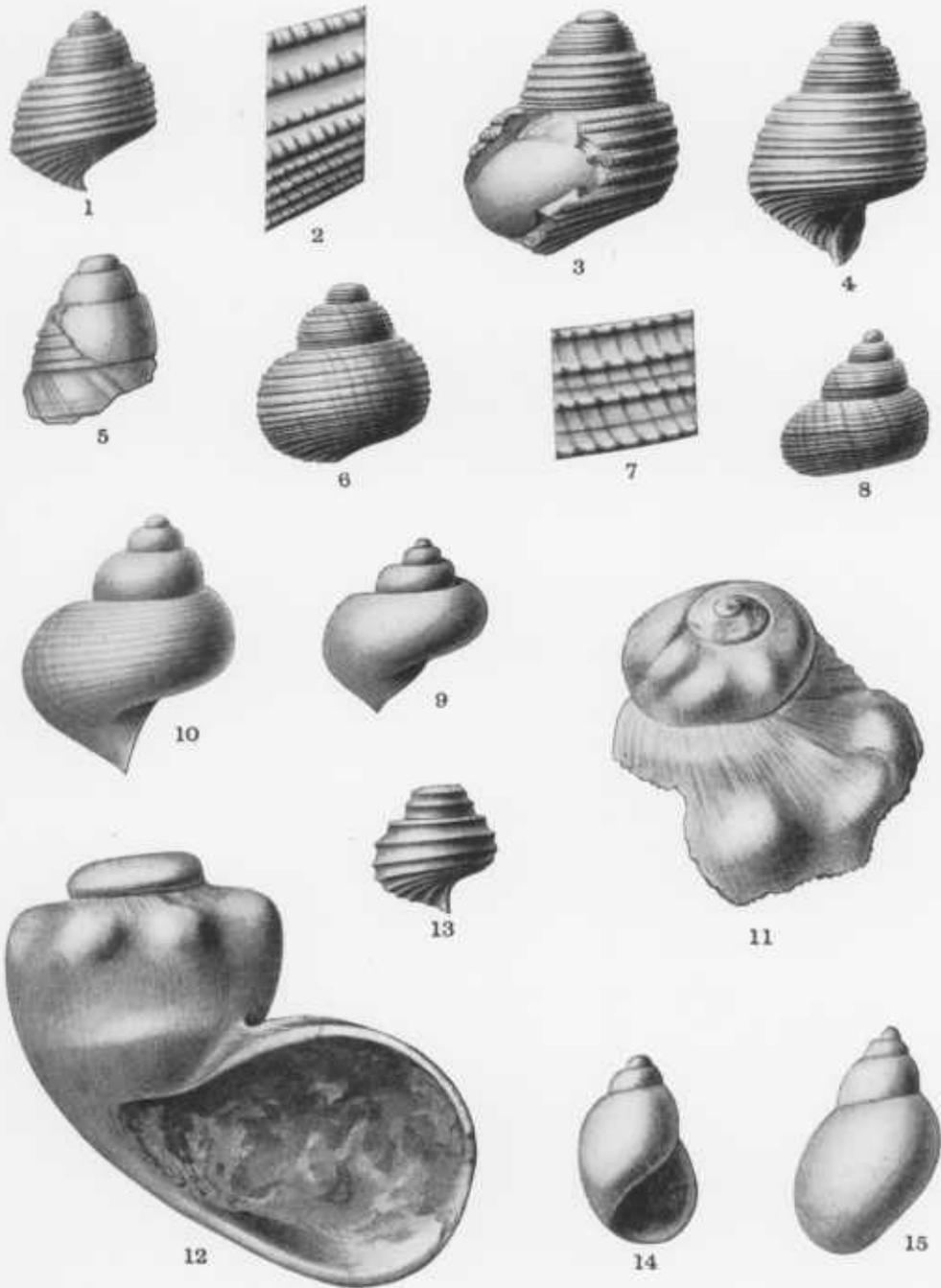


PLATE LXIX

	PAGE
Figs. 1, 2. <i>LOXONEMA HAMILTONIÆ</i> Hall.....	676
1. Dorsal view of a small specimen. × 2. Western Maryland Railroad, 2 miles west of Pawpaw, 1597.	
2. Dorsal view of a larger individual of the usual proportions. Same locality, 1485. Jennings formation, Parkhead member.	
Figs. 3-7. <i>LOXONEMA TEREBRUM</i> Hall.....	676
3. Dorsal view of a nearly complete example. National Road, 6 miles west of Frostburg.	
4. Dorsal view of a small shell. Same locality.	
5. A portion of the exterior. Same locality.	
6. Part of an internal cast. Glade Run.	
7. External and internal cast of a specimen. Same locality. Jennings formation, Chemung member.	
Figs. 8-10. <i>LOXONEMA STYLIOLUM</i> Hall.....	676
8, 9. Dorsal view of exteriors of shells upon which ornamentation is not preserved.	
10. Internal cast of apical portion. Jennings formation, Chemung member, Town Creek, 2238.	
Figs. 11-14. <i>LOXONEMA</i> (?) <i>GLABRUM</i> n. sp.....	677
11. Internal cast. Williams Road, Polish Mountain, 1660.	
12. Dorsal view of exterior. Same locality.	
13. Internal cast. Sideling Hill Creek, 2½ miles above mouth, 1700.	
14. Dorsal view of exterior of a shell probably of this species. Wil- liams Road, Polish Mountain. Jennings formation, Parkhead member.	
Figs. 15, 16. <i>TRACHYDOMIA PRÆCURSOR</i> (Clarke).....	678
Ventral and dorsal views of shell. × 1½. This is a barite replacement of the fossil from the Portage formation, Naples beds, Honeoye Lake, New York.	
Figs. 17, 18. <i>HOLOPEA ROWEI</i> n. sp.....	679
17. Internal cast of a large specimen.	
18. Dorsal view. Jennings formation, Chemung member, Williams Road, Polish Mountain.	
Figs. 19, 20. <i>HOLOPEA MARYLANDICA</i> n. sp.....	680
Dorsal views showing variations in form. Jennings formation, Che- mung member, Williams Road, Polish Mountain.	
Fig. 21. <i>HOLOPEA HUMILIS</i> n. sp.....	680
Internal cast of type. Jennings formation, Parkhead member, 2 miles north of mouth of Town Creek, 1716.	



1



3



4



5



7



2



6



11



13



8



9



10



12



14



17



15



16



21



19



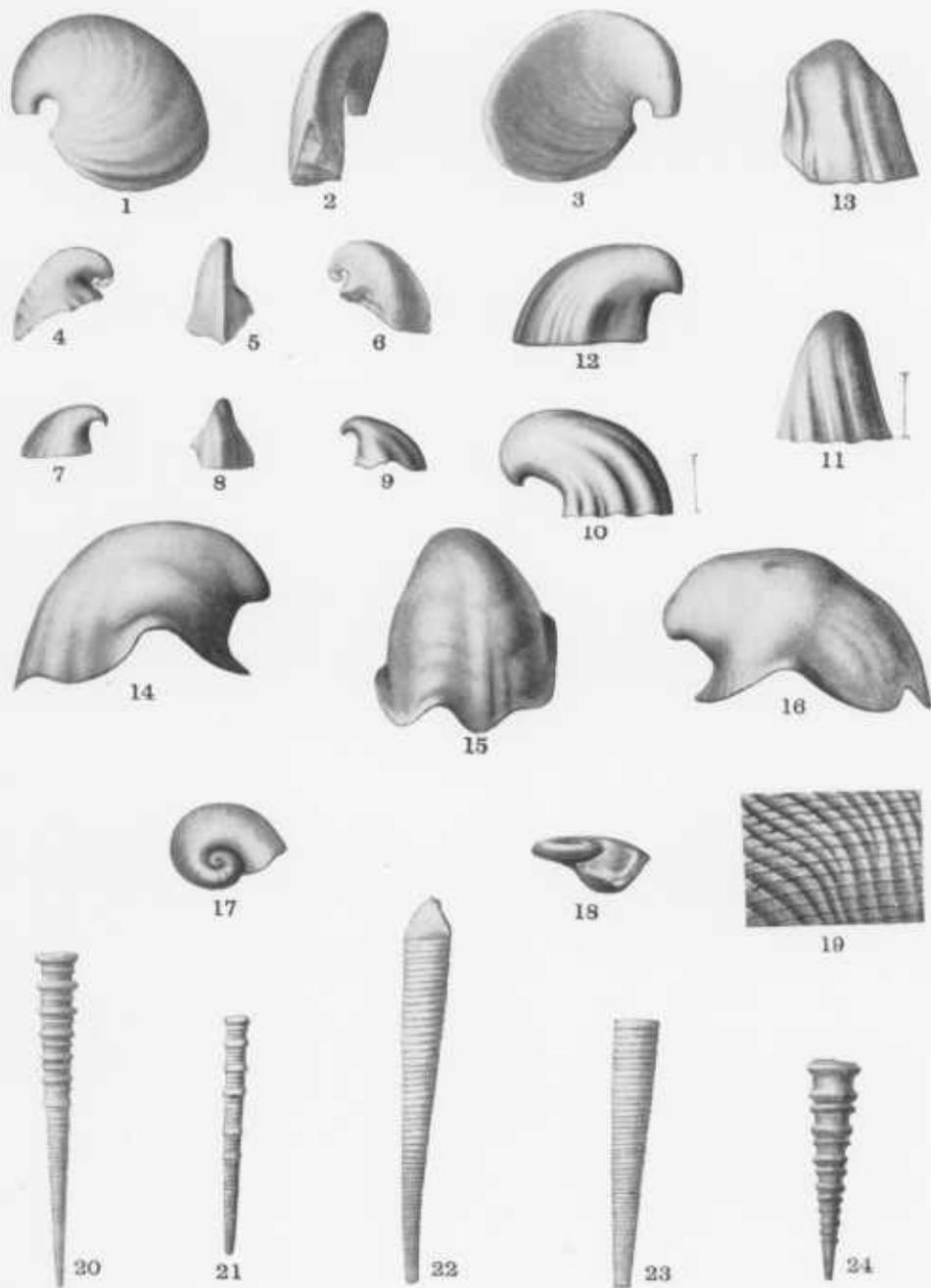
20



18

PLATE LXX

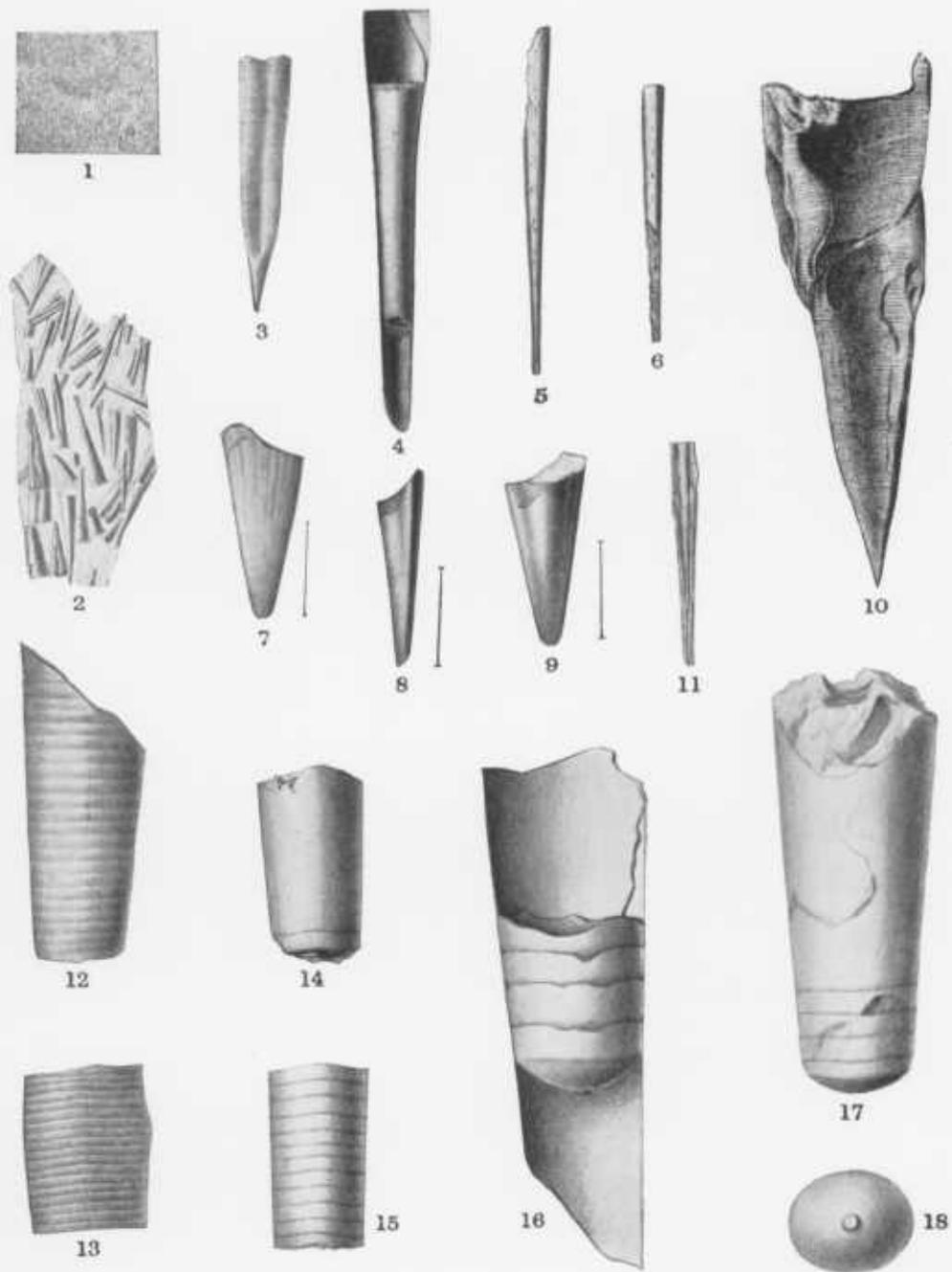
	PAGE
Figs. 1-3. <i>PLATYCERAS COMPRESSUM</i> n. sp.....	683
Three views of type. Jennings formation, Chemung member, west of Green Ridge, near Pennsylvania line.	
Figs. 4-6. <i>ORTHONYCHIA PROSSERI</i> n. sp.....	681
Three views of internal cast. Jennings formation, Chemung member, National Road, 6 miles west of Frostburg.	
Figs. 7-9. <i>ORTHONYCHIA UNGUICULATA</i> n. sp.....	682
Three views of type. Jennings formation, Parkhead member, Williams Road, Polish Mountain, 1660.	
Figs. 10, 11. <i>ORTHONYCHIA</i> sp. ....	682
Enlargement of internal cast. $\times 2$ . Jennings formation, Parkhead member, Sideling Hill Creek, $2\frac{1}{2}$ miles above mouth, 1700.	
Figs. 12-16. <i>PLATYCERAS MARYLANDICUM</i> n. sp.....	683
12, 13. Two views of a small individual. Parkhead member, Williams Road, Polish Mountain, 1660.	
14-16. Three views of type specimen. Chemung member, same locality, 2042.	
Jennings formation.	
Figs. 17-19. <i>DIAPHOROSTOMA LINEATUM</i> (Conrad).....	684
17, 18. Two views of same shell.	
19. Portion of surface enlarged $\times 7$ .	
Jennings formation, Chemung member, west of Green Ridge, near Pennsylvania line.	
Figs. 20-23. <i>TENTACULITES DESCISSUS</i> n. sp.....	686
20. A full grown example showing the subequal rings of early growth and the alternation in size in later stages. $\times 2$ . Green Ridge, Allegany County.	
21. A small example. Western Maryland.	
22, 23. Fragments of the apical parts of the tubes with only the subequal rings present. $\times 5$ .	
Jennings formation, Chemung member, Deer Park.	
Fig. 24. <i>TENTACULITES SPICULUS</i> Hall.....	687
Shell enlarged $\times 5$ . Jennings formation, Woodmont member, Ithaca fauna, National Road, east of Millstone, 795.	



MOLLUSCA—GASTROPODA

PLATE LXXI

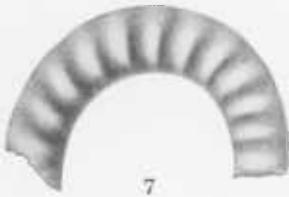
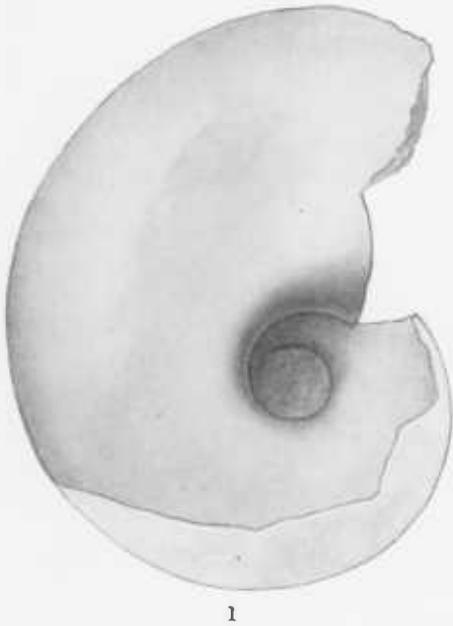
	PAGE
Figs. 1-3. <i>STYLIOLINA FISSURELLA</i> (Hall).....	685
1. Surface of fragment of shale covered with shells, natural size.	
2. Fragment enlarged. × 3.	
3. Single individual. × 6.	
Genesee formation, New York.	
Figs. 4-6. <i>COLEOLUS TENUICINTUS</i> Hall.....	687
4. Cast of interior of shell of unusually large size. Maryland-Pennsylvania state line, east of Ragged Mountain.	
5, 6. Apices of two specimens. × 6. One-half mile north of Pawpaw.	
Jennings formation, Parkhead member.	
Figs. 7-9. <i>HYOLITHES ACLIS</i> Hall.....	688
Three views of cast of interior. × 2. Jennings formation, Parkhead member, Sideling Hill Creek, 2½ miles above mouth, 1700.	
Fig. 10. <i>PHIARETRELLA TENEBROSA</i> Hall.....	690
Specimen showing ornamentation. Genesee formation, New York.	
Fig. 11. <i>BACTRITES ACICULUS</i> (Hall).....	692
A specimen showing the usual crushed and incomplete condition of the fossil. Jennings formation, Genesee member, Williams Road, near Cumberland.	
Figs. 12, 13. <i>ORTHO CERAS FILOSUM</i> Clarke.....	691
Specimens showing the surface characteristics. Jennings formation, Woodmont member, Naples fauna, Town Creek, Gilpin.	
Figs. 14, 15. <i>ORTHO CERAS DEMUM</i> Hall.....	691
14. Chamber of habitation.	
15. A part of shell showing septa.	
Jennings formation, Chemung member, National Road, east of Hancock, 2223.	
Figs. 16-18. <i>ORTHO CERAS CONSORTALE</i> Hall.....	690
16. Cast of a portion of shell showing septa.	
17. Portion of shell showing chamber of habitation.	
18. Septum showing siphuncle.	
Jennings formation, Chemung member, Williams Road, Polish Mountain, 2043.	



MOLLUSCA—GASTROPODA AND CEPHALOPODA

PLATE LXXII

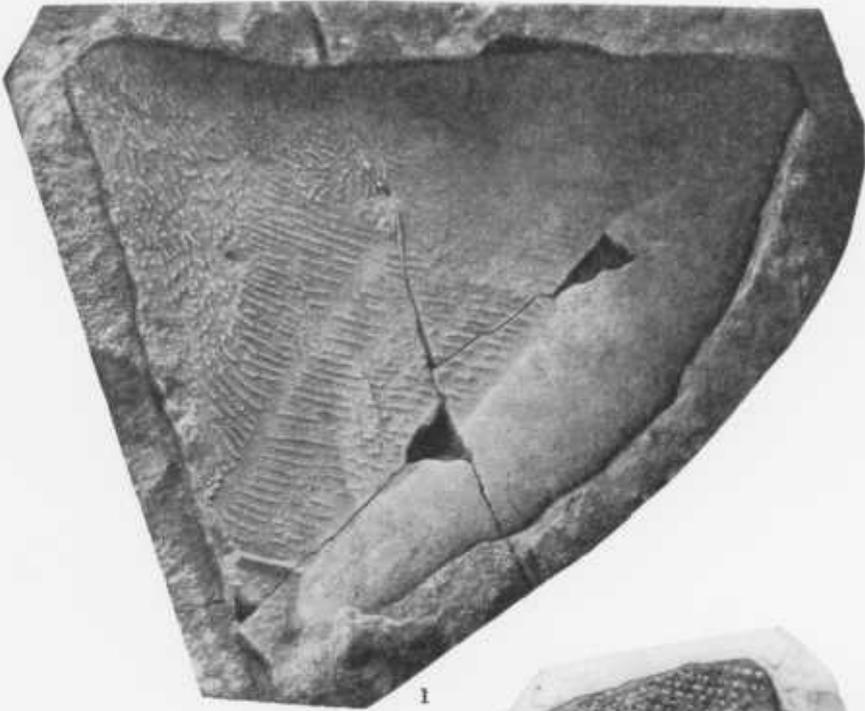
	PAGE
Figs. 1-3. <i>MANTIOCERAS PATERSONI</i> (Hali).....	693
1. Shell upon which sutures are not preserved. Chemung member, Williams Road, Poiish Mountain, 2042.	
2. Transverse section of shell shown in fig. 1.	
3. Smaller individual preserving suture lines. Portage formation, Naples fauna, New York.	
Figs. 4, 5. <i>PROBELOCERAS LUTHERI</i> Clarke.....	695
Two small specimens neither showing septa, tentatively referred to this species. Fig. 4 $\times$ 3; fig. 5 natural size. Jennings forma- tion, Genesee member, Wolfe Mill, Allegany County.	
Fig. 6. <i>TORNOCERAS UNIANGULARE</i> (Conrad).....	696
A small flattened specimen showing the characteristic septal sutures. $\times$ 2. Jennings formation, Genesee member, Williams Road, Cumberland.	
Fig. 7. <i>SANDBERGEROCERAS CHEMUNGENSIS</i> (Vanuxem).....	697
Part of a single volution. Jennings formation, near base of Parkhead member, White Sulphur Branch, 4 miles southeast of Pratt.	
Figs. 8, 9. <i>PHACOPS RANA</i> (Green).....	699
8. Glabella. Sideling Hill Creek, 2½ miles above mouth, 1700.	
9. Pygidium. Road leading northeast from Pratt, ½ mile west of 15-mile Creek. Jennings formation, Parkhead member.	



MOLLUSCA—CEPHALOPODA AND ARTHROPODA—TRILOBITA

PLATE LXXIII

	PAGE
Figs. 1-3. <i>GLYPTASPIS EASTMANI</i> n. sp. ....	700
1. Antero-ventro-lateral plate showing surface ornamentation. Jennings formation, base of Parkhead member, Horse Ridge, southwest of Hancock, 1600.	
2. Right postero-ventro-lateral plate showing surface ornamentation. Jennings formation, Parkhead member (?), west of Green Ridge, near Pennsylvania line.	
3. Fragment of an undetermined plate from the same locality as fig. 1.	



1



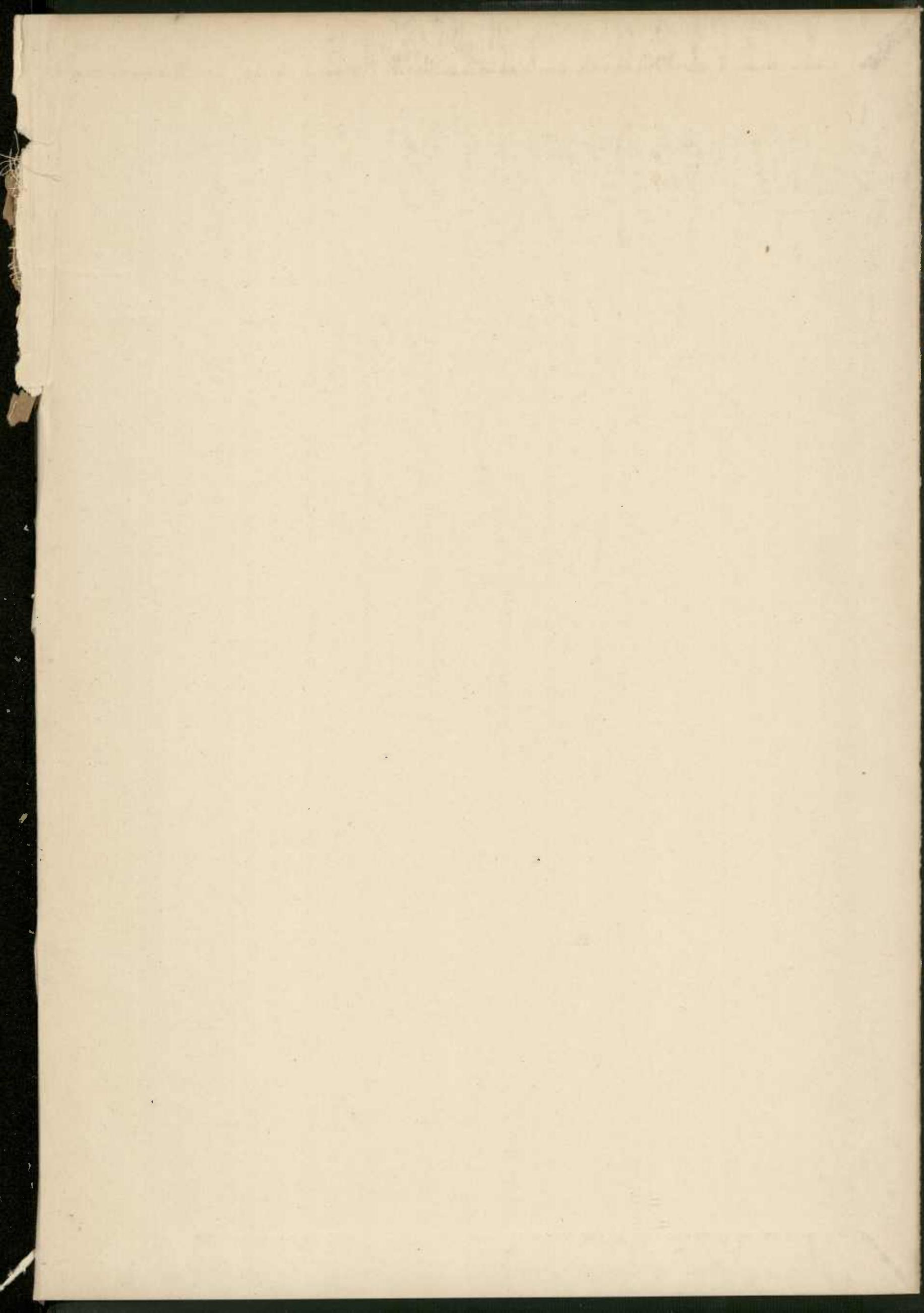
3



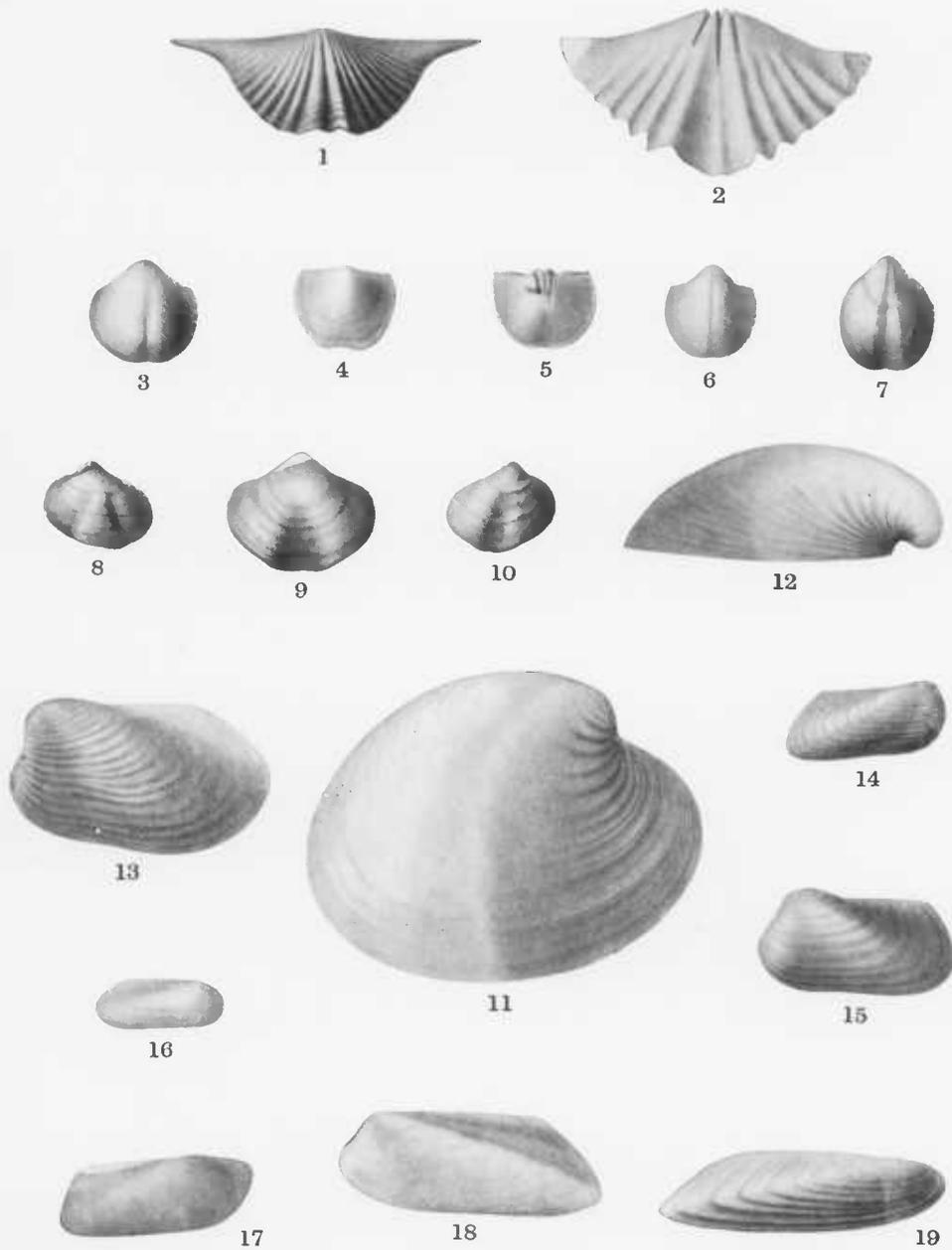
2

VERTEBRATA—PISCES









MOLLUSCOIDEA—BRACHIOPODA AND MOLLUSCA—PELECYPODA